United States
Department of
Agriculture

Natural
Resources
Conservation
Service

In cooperation with
the University of Florida,
Institute of Food and
Agricultural Sciences,
Agricultural Experiment
Stations, and Soil and
Water Science Department,
and the Florida Department
of Agricultural and
Consumer Services

Soil Survey of Gulf County, Florida

How to Use This Soil Survey

General Soil Map

The general soil map, which is a color map, shows the survey area divided into groups of associated soils called general soil map units. This map is useful in planning the use and management of large areas.

To find information about your area of interest, locate that area on the map, identify the name of the map unit in the area on the color-coded map legend, then refer to the section **General Soil Map Units** for a general description of the soils in your area.

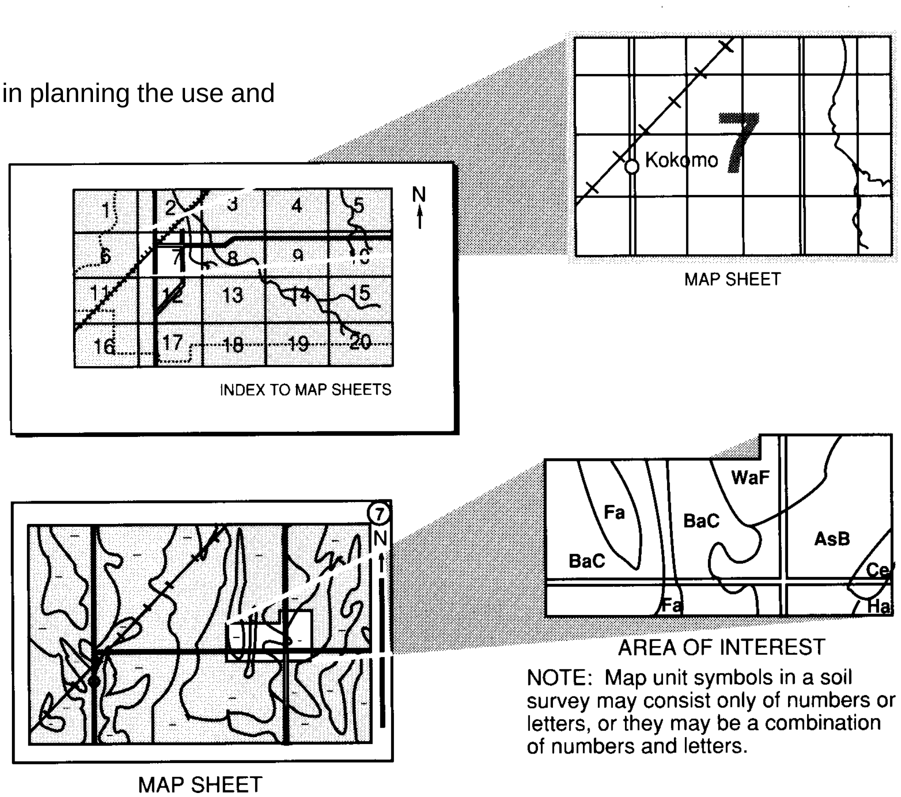
Detailed Soil Maps

The detailed soil maps can be useful in planning the use and management of small areas.

To find information about your area of interest, locate that area on the **Index to Map Sheets**. Note the number of the map sheet and turn to that sheet.

Locate your area of interest on the map sheet. Note the map unit symbols that are in that area. Turn to the **Contents**, which lists the map units by symbol and name and shows the page where each map unit is described.

The **Contents** shows which table has data on a specific land use for each detailed soil map unit. Also see the **Contents** for sections of this publication that may address your specific needs.



NOTE: Map unit symbols in a soil survey may consist only of numbers or letters, or they may be a combination of numbers and letters.

This soil survey is a publication of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (formerly the Soil Conservation Service) has leadership for the Federal part of the National Cooperative Soil Survey.

Major fieldwork for this soil survey was completed in 1991. Soil names and descriptions were approved in 1997. Unless otherwise indicated, statements in this publication refer to conditions in the survey area in 1991. This soil survey was made cooperatively by the Natural Resources Conservation Service and the University of Florida, Institute of Food and Agricultural Sciences, Agricultural Experiment Stations, and Soil and Water Science Department, and the Florida Department of Agricultural and Consumer Services. It is part of the technical assistance furnished to the Tupelo Soil and Water Conservation District. The Gulf County Board of County Commissioners contributed office space for the soil scientists.

Cover: The Dead Lakes, near Wewahitchka, which consist of a flood plain that is almost always flooded near the river channel and is seasonally flooded at its margins. The map unit near the margin of the flood plain is Croatan-Surrency complex, frequently flooded.

Additional information about the Nation's natural resources is available on the Natural Resources Conservation Service home page on the World Wide Web. The address is http://www.nrcs.usda.gov (click on "Technical Resources").

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Issued 2001

Foreword

This soil survey contains information that can be used for land-planning in Gulf County, Florida. It contains predictions of soil behavior for selected land uses. The survey also highlights limitations and hazards inherent in the soil, practices useful for overcoming the limitations, and the impact of selected land uses on the environment.

This soil survey is designed for many different users. Farmers, ranchers, foresters, and agronomists can use it to evaluate the potential of the soil and the management needed for maximum food and fiber production. Planners, community officials, engineers, developers, builders, and home buyers can use the survey to plan land use, select sites for construction, and identify practices that maximize performance. Conservationists, teachers, students, and specialists in recreation, wildlife management, waste disposal, and pollution control can use the survey to help them understand, protect, and enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. The information in this report is intended to identify soil properties that are used in making various land use or land treatment decisions. Statements made in this report are intended to help the land users identify and reduce the effects of soil limitations that affect various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

These and many other soil properties that affect land use are described in this soil survey. Broad areas of soils are shown on the general soil map. The location of each soil is shown on the detailed soil maps. Each soil in the survey area is described. Information on specific uses is given for each soil. Help in using this publication and additional information are available at the local office of the Natural Resources Conservation Service or the Cooperative Extension Service.

T. Niles Glasgow
State Conservationist
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Soil Survey of
Gulf County, Florida

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United States Department of Agriculture, Natural Resources Conservation Service, in cooperation with
the University of Florida, Institute of Food and Agricultural Sciences,
Agricultural Experiment Stations, and Soil and Water Science Department, and the
Florida Department of Agricultural and Consumer Services

GULF COUNTY is in the Central Florida Panhandle on the coast of the Gulf of Mexico (fig.1). It is bordered on the north by Calhoun County, on the west by Franklin and Liberty Counties, on the east by Bay County, and on the south by the Gulf of Mexico. The Apalachicola River forms the eastern border from the northern county line to Lake Wimico.

The total area of Gulf County is about 366,000 acres, or 571 square miles. About 1,100 acres is owned by the Federal Government. Port St. Joe, the county seat, is the largest town in the county. The county is approximately rectangular. It is about 20 miles wide and about 38 miles long from the northern county line to Cape San Blas.

According to the decennial census, the population of Gulf County was about 11,500 in 1990 (USDC, 1990). In 1988, 305,000 acres was woodland and 30,000 acres was cropland or pastureland (University of Florida, 1988). The largest industries in the county are the production of timber, the production of magnesium compounds, and the transportation of crude oil, coal, and magnesium. Commercial seafood enterprises, agriculture, and tourism are also major industries.

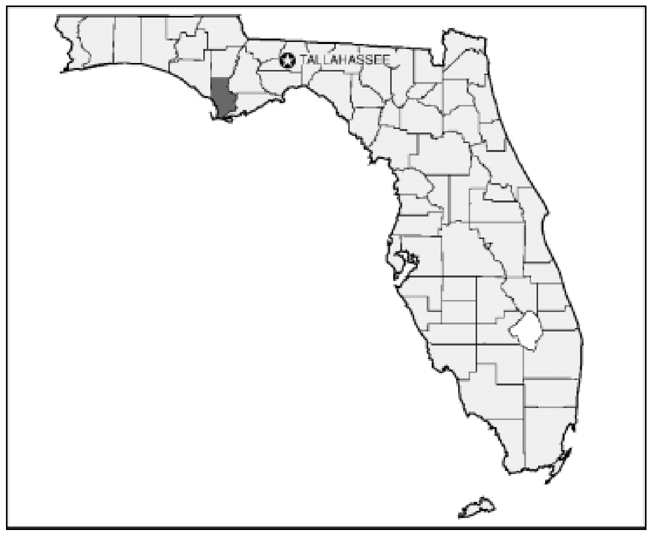

Figure 1.—Location of Gulf County in Florida.

General Nature of the County

This section gives general information about the county. Climate, history and development, transportation, hydrogeology, and mineral resources are described.

Climate

Table 1 gives data on temperature and precipitation for the survey area as recorded at Wewahitchka, Florida, in the period 1961 to 1990. Table 2 shows probable dates of the first freeze in the fall and the last freeze in spring (USDC, 1991).

Gulf County has a moderate climate. Summers are long, warm, and humid. Winters are generally mild. The Gulf of Mexico moderates the maximum and minimum temperatures. This moderating influence is greater in the coastal town of Port St.

Joe and less near the inland community of Wewahitchka.

In winter, the average temperature is about 53 degrees and the average daily minimum temperature is about 41 degrees. The lowest temperature on record, which occurred on December 24, 1990, is 11 degrees. In summer, the average temperature is about 80 degrees and the average daily maximum temperature is 91 degrees. The highest recorded temperature, which occurred on July 10, 1966, is 104 degrees.

The total annual precipitation is about 69 inches. About 26.5 inches, or 38 percent, falls in the summer, and about 16.6 inches, or 24 percent, falls in January through March. October, November, and April are generally the driest months. The maximum amount of rainfall recorded in a 24-hour period was 16.22 inches on September 21, 1969.

Most summer rain comes from local thunderstorms. During the months of June through September, measurable rainfall can be expected about every other day. Summer showers are sometimes heavy, but they rarely last all day. Day-long rains in summer are almost always associated with a tropical storm.

Winter and spring rains are typically associated with continental weather developments; they are of longer duration than the summer rains but are not as intense. As a winter cold front approaches Gulf County, the cold northern air is appreciably modified. The coldest weather generally occurs on the second night after the arrival of a cold front, after heat is lost through radiation.

The first freezing temperature in the fall generally occurs in November. Freezing temperatures occur before November 11 on the average only 2 years in 10. The last freezing temperature in the spring generally occurs in March or in late February. Freezing temperatures occur after March 13 on the average only 2 years in 10.

History and Development

Abundant artifacts found throughout Gulf County provide evidence of long periods of habitation by Native Americans. Projectile points found near Overstreet are suspected to be over 10,000 years old. The presence of fiber-tempered pottery shards at various locations in Gulf County confirms habitation around 1500 B.C., and a large conch midden on St. Joseph Bay dates to about 1000 B.C. (Swatts, 1975).

The first documented European occupation of the area is depicted as a Spanish outpost on St. Joseph Bay in 1701. In the years prior to the Louisiana Purchase in 1819, the coastal areas that are now Gulf County were occupied and abandoned by the Spanish, French, and English.

The earliest recorded exploration of the area by the United States was by Andrew Jackson and his troops in 1818.

In 1835, the U.S. Supreme Court recognized an old land grant and gave the Apalachicola Land Company legal rights to over 1 million acres of land. Disgruntled Apalachicola residents relocated to coastal Gulf County and founded the city of St. Joseph. By the late 1830’s, St. Joseph was the largest city in Florida. In 1838 and 1839, it was honored as the site of Florida’s Constitutional Convention.

The city of St. Joseph was short-lived. Yellow fever, a severe hurricane, economic depression, and fires destroyed most of the town by the mid-1840’s. Today, the St. Joseph cemetery is the only remains of the once thriving town.

The modern city of Port St. Joe is north of the site of the old city of St. Joseph and was originally named Indian Pass. Although it was a city of commerce, Port St. Joe was known to many as a resort town in the early years. The city changed rapidly after the completion of a paper mill in 1938. Industrial expansion in the city created one of the largest chemical complexes in Florida.

Gulf County now has diverse land uses. Areas to the north of Wewahitchka are part of the panhandle agricultural area. Much of the county is used for the commercial production of pine trees. The Dead Lakes near Wewahitchka, the Apalachicola River, and the beaches are popular recreation areas.

Transportation

U.S. Highway 98 crosses the southern part of Gulf County, connecting Port St. Joe with Apalachicola to the east and with Panama City to the northwest. State Highway 71 connects Port St. Joe with Wewahitchka to the north, and State Highway 22 connects Wewahitchka with Panama City to the west. Four major county roads also connect communities in the county. Several major county roads serve the more remote areas. County Road 386 provides access from Beacon Hill through Overstreet to Wewahitchka. County Road 387 provides access from Highway 71 north of White City to Howard Creek. County Road 381 connects Highway 71 with Dalkeith and the landings on the flood plain along the Apalachicola River. County Roads 30A, 30E, and 30B provide access to points along the coast, including Indian Pass, Cape San Blas, and St. Joseph Peninsula. Short-stretch county roads provide access to communities throughout the county.

The Apalachicola Northern Railroad provides freight service from Port St. Joe north and east through Franklin, Liberty, and Gadsden Counties where it connects with other major rail systems. The Intercostal Waterway provides access to the Apalachicola River, the Gulf of Mexico by way of the Gulf County Canal, and ports to the west through East Bay. Regularly scheduled air transportation is not available in Gulf County. Commercial air passenger service is available at Panama City Airport, which is about 35 miles west of Port St. Joe, and at Tallahassee Municipal Airport, which is about 120 miles northeast of Port St. Joe.

Hydrogeology

Frank R. Rupert, Geological Survey, Bureau of Geology, Florida Department of Natural Resources, prepared this section.

Ground water is water that fills the pore spaces in subsurface rocks and sediments. In order of increasing depth, the three primary ground-water aquifer systems in Gulf County are the surficial aquifer system, the intermediate confining unit, and the Florida aquifer system (Rupert, 1991).

The surficial aquifer system is generally a thin unit, varying proportionally with the thickness of the undifferentiated sands and clays. Water in the shallow undifferentiated Plio-Pleistocene sand and clay sediments is not confined, and the water level is free to rise and fall. This unconfined water comprises the surficial aquifer system, which is recharged through direct infiltration of rainwater. Generally, the thickness of the system ranges from 4 feet in the eastern part of the county to 90 feet in the northwestern part. The surface of the system most likely approximates the surface topography of the land and fluctuates in elevation due to droughts or seasonal differences in rainfall.

Water movement within the surficial aquifer system is generally downhill, or from topographically high areas to low areas. The system discharges into streams, bays, and the Gulf of Mexico. A small quantity of water from the system may percolate down into the underlying intermediate aquifer system. Some form of low-permeability confining layer, such as clay or clayey sand sediments, generally separates the surficial and intermediate aquifer systems. The surficial aquifer system is not used extensively for public water supplies in Gulf County.

The intermediate confining unit in Gulf County lies below the surficial aquifer system and is contained within the sediments of the Jackson Bluff, Chipola, and Intracoastal Formations. This unit functions primarily as a confining unit to the underlying Floridan aquifer system but may locally contain minor aquifers, depending on the thickness and lithology of the host formations. The minor aquifers, where present, consist of sands and limestones and generally yield small quantities of water suitable for domestic use.

The intermediate confining unit generally conforms to the geometry of the geological formations containing it. It ranges in thickness from about 150 feet in the northeastern part of the county to nearly 500 feet near Cape San Blas. The top of the unit varies from about 10 feet below land surface (BLS) in the northern part of the county to about 50 feet BLS at the southern edge of the county. Aquifers within the unit are recharged primarily from lateral water inflow and from seepage from the overlying and underlying aquifers. The unit is not extensively used as a potable water source in Gulf County.

The Floridan aquifer system is the most important freshwater aquifer in Florida. It underlies much of the central and eastern parts of the panhandle and most of the peninsula. In Gulf County, it is contained within a number of Eocene through Miocene formations, including the Lisbon Formation, the Ocala Group, the Marianna and Suwanne Limestones, the St. Marks Formation, and the Bruce Creek Limestone. The Floridan aquifer system is the thickest and most productive unit in the central part of the panhandle. It supplies the bulk of the water used for domestic, urban, and agricultural purposes in Gulf County.

The top of the Floridan aquifer system corresponds to the top of the Bruce Creek Limestone. In Gulf County, it ranges from about 150 feet BLS at the northern edge of the county to about 500 feet BLS under St. Joseph Peninsula. The aquifer thickens to the south-southwest. It ranges from about 1,000 feet thick at the Gulf-Calhoun County line to about 2,200 feet thick in the southeastern part of Gulf County, near Lake Wimico. The Floridan aquifer system is underlain by the sub-Floridan confining unit, which is comprised of the Middle Eocene Tallahatta Formation and older sediments. These sediments typically contain clays, shales, and chalk, which act as confining layers.

The Floridan aquifer system is confined in all areas of Gulf County. Minor recharge may occur through downward seepage from aquifer units in the overlying intermediate confining system, but most recharge occurs from water inflow from adjacent counties. Direct recharge to the Floridan aquifer system occurs to the north of Gulf County in Jackson County where the

porous limestones comprising the aquifer are exposed at the surface.

Mineral Resources

Frank R. Rupert, Geological Survey, Bureau of Geology, Florida Department of Natural Resources, prepared this section.

The following material is a general overview of the near-surface mineral commodities and petroleum resources in Gulf County (Rupert, 1991). Information in this section was derived from mineral reports included in various publications of the Florida Geological Survey, from data on file at the Florida Geological Survey, and from data supplied by the Gulf County Road Department.

Clay occurs as discrete beds in the undifferentiated sediments covering Gulf County and as a matrix constituent of the sediments. Most clays represent Pliocene and Pleistocene deltaic deposits. Although widespread, many of these deposits contain significant impurities, such as quartz sand. Relatively pure Holocene flood plain clays are common along the Apalachicola River, and one such deposit has been used for brick making in neighboring Calhoun County.

Other clays are associated with the deeper Pliocene and Miocene units underlying Gulf County. Most of these clays are untested. The depth to these units generally limits their economic potential.

Map units that contain clayey soils are Bladen fine sandy loam; Wahee fine sandy loam; Meggett fine sandy loam, occasionally flooded; Pantego and Bayboro soils, depressional; Brickyard silty clay, frequently flooded; Brickyard, Chowan, and Kenner soils, frequently flooded; and Kenansville-Eulonia complex, 0 to 5 percent slopes.

The extent to which the clay resources in the county are explored and utilized largely depends on local demand. A lack of useable clay deposits and insufficient demand for clay products preclude economic development of these resources.

Miocene and Pliocene limestone ($CaCO_3$) and dolomite ($CaMg(CO_3)_2$) are present at depth under all of Gulf County. These materials have not been mined in the county. The impure nature of most of these units and the thickness of the overburden make economic mining impractical.

Quartz sand (SiO_2) is a common component of the undifferentiated Pliocene through Holocene age surficial sediments in Gulf County. It is also the primary constituent of the near-shore continental shelf deposits. Localized gravel deposits are also present in portions of the undifferentiated sediments in the northern part of the county. Much of this sand, with the exception of the marine coastal and eolian deposits, is interbedded with clays. The beach sand and dune sand generally have too fine a grain size for practical industrial use. Map units that are excessively drained to somewhat poorly drained and contain very deep sandy materials are Ridgewood fine sand; Corolla fine sand, 1 to 5 percent slopes; Ortega fine sand, 0 to 5 percent slopes; Mandarin fine sand; Scranton fine sand; Newhan-Corolla complex, rolling; Kureb-Corolla complex, rolling; and Quartzipsamments, undulating.

Surficial sand from private borrow pits in the county is used without processing for local fill projects. Future development of this resource depends primarily on local demand.

Heavy minerals consist of sand-sized grains of a number of different mineral types, including ilmenite, zircon, rutile, staurolite, monazite, and tourmaline. They are typically associated with marine sand deposits and are often concentrated by wave action along coastal beaches.

Although the heavy mineral deposits in Gulf County are similar in composition to deposits that could be mined in northeastern Florida, the deposits in Gulf County are not wide enough or thick enough to be commercial grade.

Analyses of the continental shelf sediments in areas offshore of Gulf County show generally similar heavy mineral assemblages and proportions. A suite of heavy minerals comprised of leucoxene, rutile, sphene, kyanite, tourmaline, staurolite, zircon, epidote, sillimanite, and amphibole (hornblende) has been observed. The offshore deposits are most likely from the same source as the beach deposits, having been carried into the area from the crystalline belt of the southern Appalachian Piedmont by the Apalachicola River.

Magnesium oxide and magnesium hydroxide are produced in Gulf County from a mixture of imported calcined dolomite and seawater from St. Joseph Bay. Magnesium oxide is used in the production of chemicals, insulation, pulp, paper, rayon, fertilizers, medicines, rubber, and building materials and in refractory processes. Magnesium hydroxide is used in water purification processes, pharmaceuticals, and sugar refining.

The oldest oil wells in the county date to the mid-1940's and early 1950's. These wells targeted Cretaceous sediments, probably in an attempt to locate a southeastern extension of the productive Tuscaloosa trend of southwestern Alabama. None of these wells exceeded 9,000 feet in depth. All of them were dry holes.

After the discovery in 1970 of oil in the Jurassic Smackover Formation and Norphlet Sandstone in the

Jay Field in Santa Rosa County, several companies extended an exploration program into the Apalachicola Embayment area in Gulf County. In the early- to mid-1970’s, these companies drilled a series of wells trending northwest to southeast through Gulf County. The wells tested the central panhandle portion of the Jurassic Smackover Formation and Norphlet Sandstone units, stopping at depths ranging from 13,284 to 14,570 feet below land surface. Only one well contained oil. It was in the northwestern part of the county. The oil was contained in a dense, impermeable section of Smackover Formation limestone and in underlying calcareous sandstone. Because of the low permeability and porosity of the host rock, the oil was nonrecoverable. The well was plugged and abandoned in 1974.

The Smackover Formation and Norphlet Sandstone still offer potential as petroleum sources in Gulf County. Faulting within the Smackover Formation and stratigraphic pinchouts along the flanks of the igneous intrusive bodies on which the Smackover sediments were deposited may provide traps for economically viable accumulations of oil.

How This Survey Was Made

This survey was made to provide information about the soils in the survey area. The information includes a description of the soils and their location and a discussion of the suitability, limitations, and management of the soils for specified uses. Soil scientists observed the steepness, length, and shape of slopes; the general pattern of drainage; and the kinds of crops and native plants growing on the soils (USDA, 1988). They dug many holes to study the soil profile, which is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material from which the soil formed. The unconsolidated material is primarily devoid of roots and other living organisms and has been relatively unaffected by other biological activity.

The soils in the survey area are distributed in a pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil is associated with a particular kind of landscape or with a segment of the landscape. By observing the soils in the survey area and relating their position to specific segments of the landscape, a soil scientist develops a concept, or model, of how the soils were formed. Thus, during mapping, this model enables the soil scientist to predict the kind of soil at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. The system of taxonomic classification used in the United States is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

While a soil survey is in progress, samples of some of the soils in the area are generally collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses under different levels of management.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot assure that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads,

and rivers, all of which help in locating boundaries accurately.

A ground-penetrating radar (GPR) system was used to document the type and variability of the soils in the detailed soil map units (Doolittle, 1982; Johnson, Glaccum, and Wojtasinski, 1979). More than 180 random transects were made with the GPR system and by hand. The GPR system was used to detect the presence of, and measure the depth to, major soil horizons or other soil features and to determine the variability of those features. Information from notes, ground-truth observations made in the field, and radar data from this study were used to classify the soils and to determine the composition of the map units. The map units described in the section “Detailed Soil Map Units” are based on this data.

Map Unit Composition

A map unit delineation on a soil map represents an area dominated by one major kind of soil or an area dominated by two or three kinds of soil. A map unit is identified and named according to the taxonomic classification of the dominant soil or soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural objects. In common with other natural objects, they have a characteristic variability in their properties. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of soils of other taxonomic classes. Consequently, every map unit is made up of the soil or soils for which it is named and some soils that belong to other taxonomic classes. In the detailed soil map units, these latter soils are called inclusions or included soils. In the general soil map units, they are called soils of minor extent.

Most inclusions have properties and behavioral patterns similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting (similar) inclusions. They may or may not be mentioned in the map unit descriptions. Other inclusions, however, have properties and behavior divergent enough to affect use or require different management. These are contrasting (dissimilar) inclusions. They generally occupy small areas and cannot be shown separately on the soil maps because of the scale used in mapping. The inclusions of contrasting soils are mentioned in the map unit descriptions. A few inclusions may not have been observed and consequently are not mentioned in the descriptions, especially where the soil pattern was so complex that it was impractical to make enough observations to identify all of the kinds of soils on the landscape.

The presence of inclusions in a map unit in no way diminishes the usefulness or accuracy of the soil data. The objective of soil mapping is not to delineate pure taxonomic classes of soils but rather to separate the landscape into segments that have similar use and management requirements. The delineation of such landscape segments on the map provides sufficient information for the development of resource plans, but onsite investigation is needed to plan for intensive uses in small areas.

Confidence Limits of Soil Survey Information

Confidence limits are statistical expressions of the probability that the composition of a map unit or a property of the soil will vary within prescribed limits. Confidence limits can be assigned numerical values based on a random sample. In the absence of specific data to determine confidence limits, the natural variability of soils and the way soil surveys are made must be considered. The composition of map units and other information are derived largely from extrapolations made from a small sample. Also, information about the soils does not extend below a depth of about 6 feet. The information presented in the soil survey is not meant to be used as a substitute for onsite investigations. Soil survey information can be used to select alternative practices or general designs that may be needed to minimize the possibility of soil-related failures. It cannot be used to interpret specific points on the landscape.

Specific confidence limits for the composition for map units in Gulf County were determined by random transects made with a ground-penetrating radar system and by hand across mapped areas. The data are statistically summarized in the description of each map unit in the section “Detailed Soil Map Units.” Soil scientists made enough transects and took enough samples to characterize each map unit at a specific confidence level. For example, map unit 36, Sapelo sand, was characterized at a 95 percent confidence level based on the transect data. This means that on 95 percent of the acreage mapped as Sapelo sand, Sapelo and similar soils make up about 80 to 100 percent of the mapped areas.

General Soil Map Units

The general soil map at the back of this publication shows broad areas that have a distinctive pattern of soils, relief, and drainage. Each map unit on the general soil map defines a specific group of natural landscapes. Typically, it consists of one or more major soils and some minor soils. It is named for the major soils. The soils making up one unit can occur in another but in a different landscape pattern.

The general soil map can be used to compare the suitability of large areas for general land uses. Areas of suitable soils can be identified on the map. Likewise, areas where the soils are not suitable can be identified.

Because of its small scale, the map is not suitable for planning the management of a farm or field or for selecting a site for a road or a building or other structure. The soils in any one map unit differ from place to place in slope, depth, drainage, and other characteristics that affect management.

Soils on Uplands and in Areas of Flatwoods

The two general soil map units in this group consist of nearly level and gently sloping, well drained to somewhat poorly drained soils. These soils have a sandy surface layer and subsurface layer and a loamy subsoil.

1. Stilson-Fuquay-Dothan

Nearly level and gently sloping, moderately well drained and well drained soils that have a sandy surface layer and a loamy subsoil; formed in sandy and loamy sediments

This map unit is on uplands that parallel the flood plain along the Apalachicola River from Honeyville to the Calhoun County line. The landscape is well dissected by small streams and is interspersed with depressions. The natural vegetation consists of mixed pines and hardwoods.

This map unit makes up about 1 percent of the county. It is about 45 percent Stilson soils, 35 percent Fuquay soils, 10 percent Dothan soils, and 10 percent soils of minor extent.

Stilson soils are moderately well drained. The surface layer is dark grayish brown loamy fine sand. The subsurface layer is yellowish brown loamy fine sand. The upper part of the subsoil is yellowish brown fine sandy loam. The next part is light yellowish brown fine sandy loam that has mottles in shades of gray, brown, red, and yellow and has 5 to 10 percent plinthite. The lower part is sandy clay loam that is mottled in shades of gray, brown, and red.

Fuquay soils are well drained. The surface layer is dark gray loamy fine sand. The subsurface layer is light yellowish brown loamy fine sand. The upper part of the subsoil is brownish yellow fine sandy loam. The next part is brownish yellow sandy clay loam that has mottles in shades of brown and has 10 percent plinthite. The lower part is sandy clay loam that is mottled in shades of gray and brown and has 5 percent plinthite.

Dothan soils are well drained. The surface layer is dark grayish brown loamy sand. The subsurface layer is light yellowish brown loamy sand. The upper part of the subsoil is yellowish brown fine sandy loam that has 10 percent plinthite. The next part is sandy clay loam that is mottled in shades of gray, brown, yellow, and red and has 5 percent plinthite. The lower part is sandy clay loam that is mottled in shades of gray, brown, yellow, and red.

The soils of minor extent in this map unit include Clarendon, Leefield, Lucy, Ocilla, Pantego, Plummer, and Rains soils.

Most areas of this map unit are used as woodland or cropland. Generally, no significant management concerns affect these uses.

2. Leefield-Albany-Blanton

Nearly level and gently sloping, somewhat poorly drained and moderately well drained soils that have a thick, sandy surface layer and a loamy subsoil

This map unit is on low uplands in broad areas in the northern quarter of the county and along a low ridge that parallels the flood plain along the Apalachicola River from Wewahitchka to Howard Creek. Areas of this unit generally are dissected by

streams and creeks. The natural vegetation consists of mixed pines and hardwoods.

This map unit makes up about 8 percent of the county. It is about 35 percent Leefield soils, 25 percent Albany soils, 10 percent Blanton soils, and 30 percent soils of minor extent.

Leefield soils are somewhat poorly drained. The surface layer is very dark gray loamy fine sand. The subsurface layer is light yellowish brown and pale brown loamy fine sand. The upper part of the subsoil is fine sandy loam that is mottled in shades of gray, yellow, and red and has 5 percent plinthite. The lower part is grayish brown sandy clay loam that has mottles in shades of yellow, gray, and red.

Albany soils are somewhat poorly drained. The surface layer is a very dark gray sand. The upper part of the subsurface layer is light yellowish brown loamy sand. The lower part is very pale brown loamy sand that has mottles in shades of brown and yellow. The subsoil is light gray sandy loam that has mottles in shades of yellow, brown, and gray in the upper part and in shades of brown and pink in the lower part.

Blanton soils are moderately well drained. The surface layer is dark grayish brown sand. The upper part of the subsurface layer is light yellowish brown sand. The lower part is very pale brown sand. The upper part of the subsoil is brownish yellow loamy sand and sandy loam having mottles in shades of brown. The lower part is light gray sandy loam that has mottles in shades of brown.

The soils of minor extent in this map unit include Alapaha, Clarendon, Ortega, Plummer, Ridgewood, Sapelo, and Stilson soils.

Most areas of this map unit are used as woodland. Some areas are used for cultivated crops or pasture.

This map unit is suited to slash pine. Droughtiness and seasonal wetness are management concerns.

This map unit is suited to cultivated crops, pasture, and hayland. Seasonal droughtiness is a management concern.

The Blanton soils in this map unit are suited to urban development. The sandy surface layer and wetness are management concerns. The Albany and Leefield soils are poorly suited to urban development. Wetness and the restricted permeability in the Leefield soils are management concerns.

This map unit is poorly suited to recreational development. Wetness and the sandy surface layers are management concerns.

Soils in Areas of Flatwoods, on Low Flats, in Depressions, and on Terraces

The seven general soil map units in this group consist of nearly level and gently sloping, very poorly drained to moderately well drained soils. Some of these soils have sandy surface and subsurface layers and a loamy subsoil; some are deep, sandy soils that have organic material in the subsoil; some have a loamy surface layer and a clayey subsoil; some are sandy throughout and do not have a subsoil; and some are organic soils that have a loamy or sandy substratum.

3. Pelham-Plummer-Alapaha

Nearly level, poorly drained soils that are sandy to a depth of 40 inches or more or to a depth of 20 to 40 inches and that are loamy below the sandy material

This map unit is on low flats and in areas of low flatwoods. It is in broad, nearly level areas extending from the northwestern part of the county through the central part of the county to the Lake Wimico swamps in the southeastern part of the county. It is the largest general soil map unit in the county. The landscape has low relief and includes numerous swamps, depressions, and poorly defined drainageways. The natural vegetation consists of black titi, swamp cyrilla, sweetbay, blackgum, baldcypress, water oak, and slash pine and an understory of wiregrass, wax-myrtle, and saw palmetto.

This map unit makes up about 25 percent of the county. It is about 40 percent Pelham soils, 40 percent Plummer soils, 10 percent Alapaha soils, and 10 percent soils of minor extent.

The surface layer of the Pelham soils is black loamy fine sand. The subsurface layer is grayish loamy fine sand. Gray fine sandy loam is at a depth of 20 to 40 inches. Below this is gray sandy clay loam.

The surface layer of the Plummer soils is very dark gray fine sand. The subsurface layer is grayish fine sand. The subsoil is gray fine sandy loam. It is at a depth of 40 inches or more.

The surface layer of the Alapaha soils is black loamy fine sand. The subsurface layer is dark gray loamy fine sand. The upper part of the subsoil, to a depth of 40 inches, is gray fine sandy loam. The lower part is sandy clay loam containing soft and hardened ironstone nodules.

The soils of minor extent in this map unit include Albany, Bayboro, Bladen, Croatan, Dorovan, Leefield, Pantego, and Rains soils.

Most areas of this map unit are used as woodland. This map unit is suited to slash pine. Wetness is a management concern.

Wetness is the main management concern for most land uses. Drainage and bedding are commonly practical for the production of specialty crops, such as blueberries (fig. 2). Filling can help to overcome the wetness on sites for homes and septic tank absorption fields.

Figure 2.—Blueberries in an area of the Pelham-Plummer-Alapaha general soil map unit. Bedding is used to elevate the plants above the seasonal high water table.

4. Rains-Bladen

Nearly level, poorly drained soils that have a thin, loamy surface layer and a clayey subsoil or that have a loamy surface layer, a loamy subsoil, and a clayey substratum

This map unit is on low flats in pitcher plant bogs and wet savannas. It occurs as a cluster of several areas that are separated from each other by Cypress Creek and its tributaries. The landscape has low relief and includes numerous swamps, depressions, and poorly defined drainageways. The natural vegetation consists of scattered slash pine, sweetbay, water oak, and red maple and an understory of wiregrass, pitcher plant, black titi, St. Johnswort, and saw palmetto.

This map unit makes up about 5 percent of the county. It is about 70 percent Rains soils, 10 percent Bladen soils, and 20 percent soils of minor extent.

The surface layer of the Rains soils is very dark grayish brown fine sandy loam. The subsurface layer is light gray fine sandy loam. The upper part of the subsoil, to a depth of 36 inches, is gray fine sandy loam. The lower part, to a depth of 80 inches or more, is gray sandy clay loam.

The surface layer of the Bladen soils is very dark grayish brown fine sandy loam. The subsurface layer is light brownish gray fine sandy loam. The upper part of the subsoil, to a depth of 50 inches, is gray clay loam. The lower part, to a depth of 80 inches or more, is light gray clay.

The soils of minor extent in this map unit include

Albany, Bayboro, Croatan, Dorovan, Leefield, Plummer, and Pantego soils.

Most areas of this map unit are used as woodland. Potential productivity is high for slash pine. Wetness is the main management concern. Bedding is commonly used to overcome the wetness.

Wetness is the main management concern for most land uses. Drainage is commonly practical for the production of cultivated crops. Filling can help to overcome the wetness on sites for homes and septic tank absorption fields.

5. Leon-Pickney-Mandarin

Nearly level, poorly drained, very poorly drained, and somewhat poorly drained soils that are sandy to a depth of at least 80 inches

This map unit is in areas of flatwoods, in depressions, and on low ridges. It extends from the extreme southern part of the county on the Gulf of Mexico northwest along the coast through Port St. Joe to the western county line. The landscape is a repeating sequence of low ridges and depressions parallel to the coast. Maximum development of this sequence occurs nearest to the coast. The development is less pronounced farther inland. The natural vegetation on the ridges and in the areas of flatwoods consists of slash pine, longleaf pine, water oak, turkey oak, saw palmetto, gallberry, wiregrass, broomsedge, and bluestem. The natural vegetation in the depressions consists of slash pine, black titi, swamp cyrilla, baldcypress, and sweetbay and an understory of titi, St. Johnswort, and pitcher plants.

This map unit makes up about 6 percent of the county. It is about 45 percent Leon soils, 30 percent Pickney soils, 10 percent Mandarin soils, and 15 percent soils of minor extent.

Leon soils are poorly drained. The surface layer is dark gray fine sand. The subsurface layer is light gray fine sand to a depth of 21 inches. The upper part of the subsoil, to a depth of 29 inches, is very dark brown fine sand. The lower part, to a depth 35 inches, is very pale brown fine sand. The underlying material is light gray and white fine sand.

Pickney soils are very poorly drained. The surface layer is black to very dark grayish brown fine sand. It extends to a depth of 51 inches. The underlying material is grayish brown fine sand.

Mandarin soils are somewhat poorly drained. The surface layer is very dark gray fine sand. The subsurface layer is light brownish gray fine sand to a depth of 13 inches. The subsoil is dark brown or brown fine sand to a depth of 30 inches. The underlying material is white fine sand.

The soils of minor extent in this map unit include Lynn Haven, Maurepas, Ridgewood, Resota, Pottsburg, Pamlico, and Scranton soils.

Most areas of this map unit are used as woodland. A few areas have been developed for homesites. Some areas are suited to slash pine.

Wetness is a management concern. Pickney soils are not suited to woodland because of ponding.

This map unit is poorly suited to urban development. Wetness is a management concern. Draining, filling, and mounding are commonly used to overcome the wetness. This map unit generally is not used for cultivated crops because of the wetness in some areas and droughtiness in others.

6. Scranton-Pickney-Leon

Nearly level, poorly drained and very poorly drained, sandy soils that have a stained subsoil, do not have a develop subsoil, or have a thick, dark surface layer

This map unit is in areas of flatwoods and in depressions. The landscape has broad flats interspersed with numerous elongated depressions that commonly are tenuously connected by intermittent drains (fig. 3). Areas are generally parallel to the coastline and are located several miles inland. One small area is adjacent to the coastline of St. Joseph Bay. The natural vegetation in the areas of flatwoods includes slash pine, laurel oak, and water oak and an understory of saw palmetto, wax-myrtle, and wiregrass. The natural vegetation in the depressions includes pondcypress and sweetbay and an understory of black titi, swamp cyrilla, and sawgrass.

The map unit makes up about 8 percent of the county. It is about 45 percent Scranton soils, 20 percent Pickney soils, 10 percent Leon soils, and 25 percent soils of minor extent.

Scranton soils are poorly drained. The surface layer is very dark brown fine sand. The underlying material is brownish and grayish fine sand.

Pickney soils are very poorly drained. The surface layer is black to very dark grayish brown fine sand. It ranges from 24 to 60 inches in thickness. The underlying material is brownish and grayish fine sand.

Leon soils are poorly drained. The surface layer is dark gray fine sand. The subsurface layer is light gray fine sand to a depth of 21 inches. The subsoil is very dark brown and very pale brown fine sand to a depth of 35 inches. The underlying material is grayish and white fine sand.

The soils of minor extent in this map unit include Lynn Haven, Mandarin, Pamlico, Pottsburg, Resota, and Rutlege soils.

Most areas of this map unit are used as woodland.

Figure 3.—A typical landscape in the Scranton-Pickney-Leon general soil map unit. The Leon and Scranton soils are in the flat, nearly level area, which has pine savanna vegetation. The Pickney soils are in the densely wooded depressions in the background.

These areas are suited to slash pine. Wetness is a management concern. Pickney soils are not suited to woodland because of ponding.

Most areas of this map unit are poorly suited to urban development. Wetness is a management concern. Draining, filling, and mounding are commonly used to overcome the wetness.

This map unit generally is not used for cultivated crops because of the wetness.

7. Bladen-Wahee-Kenansville

Nearly level, poorly drained to moderately well drained soils that have a loamy surface layer and a loamy and clayey subsoil to a depth of 80 inches or more or that have a sandy surface layer, are loamy to a depth of less than 60 inches, and are sandy below the loamy material

This map unit is on low flats that are dissected by oxbow depressions and interspersed with low uplands. Most areas of this map unit are between the Dead Lakes and the flood plain along the Apalachicola River north of the Chipola River cutoff. The natural vegetation consists of spruce pine, sweetgum, live oak, dogwood, water oak, and red maple.

This unit makes up about 2 percent of the county. It is about 45 percent Bladen soils, 20 percent Wahee soils, 5 percent Kenansville soils, and 30 percent soils of minor extent.

Bladen soils are poorly drained. The surface layer is very dark grayish brown fine sandy loam. The subsurface layer is light brownish gray sandy loam to a depth of 18 inches. The upper part of the subsoil, to a depth of 50 inches, is grayish sandy clay loam. The lower part, to a depth of 80 inches or more, is grayish clay.

Wahee soils are poorly drained. The surface layer is dark grayish brown fine sandy loam. The subsurface layer is light yellowish brown loam to a depth of 12 inches. The upper part of the subsoil, to a depth of 43 inches, is light yellowish brown sandy clay. The lower part, to depth of 72 inches, is light gray clay. The underlying material is brownish sandy loam to a depth of 80 inches or more.

Kenansville soils are moderately well drained. The surface layer is very dark grayish brown loamy fine sand. The subsurface layer is yellowish brown loamy fine sand to a depth of 23 inches. The upper part of the subsoil, to a depth of 59 inches, is yellowish sandy clay loam. The lower part, to a depth of 71 inches, is reddish fine sandy loam. The underlying material is yellowish fine sandy loam to a depth of 80 inches or more.

The soils of minor extent in this map unit are Brickyard, Clarendon, Bayboro, Chowan, Kenner, Eulonia, Pantego, and Meggett soils.

Most areas of this map unit are used as woodland. This map unit is suited to hardwoods and slash pine. Wetness is a management concern.

Wetness is a management concern for cultivated crops.

This map unit is generally not suited to most land uses. Wetness, restricted permeability in the subsoil, and shrink-swell potential are management concerns for urban development.

8. Surrency-Pantego-Croatan

Nearly level, very poorly drained soils that have a sandy or mucky sand surface layer and a loamy subsoil at a depth of 20 to 40 inches or that have a 20- to 50-inch-thick organic surface layer and a loamy substratum

This map unit is in broad depressions and narrow swamps along small streams and creeks throughout the northern and central parts of the county. Some of the streams have well defined channels and a constant flow throughout the year. Other streams have no discernible channel, and water flows only seasonally or during flash floods following heavy rains. Most areas of this map unit are ponded for long periods. The natural vegetation consists of water tupelo, baldcypress, sweetbay, and red maple and an understory of ferns and grasses.

This map unit makes up about 12 percent of the county. It is about 50 percent Surrency soils, 15 percent Pantego soils, 15 percent Croatan soils, and 20 percent soils of minor extent.

The surface layer of the Surrency soils is black mucky fine sand to a depth of 18 inches. The subsurface layer is very dark grayish brown loamy fine sand to a depth of 34 inches. The subsoil is grayish to brownish sandy loam to a depth of 80 inches or more.

The surface layer of the Pantego soils is very dark gray sandy loam. The subsurface layer is grayish sandy loam to a depth of 18 inches. The upper part of the subsoil, to a depth of 44 inches, is gray clay loam. The lower part, to a depth of 80 inches or more, is light gray clay.

The surface layer of the Croatan soils, to a depth of 40 inches, is dark brown to very dark grayish brown muck. Below this are layers of brownish and grayish mucky sandy loam, sandy clay, loam, and clay loam.

Of minor extent in this map unit are Aquents and Alapaha, Bayboro, Bladen, Clarendon, Dorovan, Maurepas, Meadowbrook, Pelham, Pickney, Plummer, Rutlege, and Stilson soils.

Most areas of this map unit support natural vegetation. A few areas are used as woodland. This map unit generally is not suited to most land uses. Ponding, flooding, and low bearing strength are management concerns.

9. Pickney-Pamlico

Nearly level, very poorly drained soils that are sandy to a depth of 80 inches or more or that are organic to a depth of 16 to 50 inches and are underlain by sandy mineral layers

This map unit is in large depressions and swamps between the coastal ridge and the interior flatwoods. Areas of this map unit are generally parallel to the coast. The natural vegetation consists of sweetbay, pondcypress, slash pine, swamp cyrilla, and black titi.

This unit makes up about 6 percent of the county. It is about 40 percent Pickney soils, 25 percent Pamlico soils, and 35 percent soils of minor extent.

The surface layer of the Pickney soil is black, very dark brown, and very dark grayish brown fine sand to a depth of 51 inches. The underlying material is grayish brown fine sand to a depth of 80 inches or more.

The upper part of the surface layer of the Pamlico soils, to a depth of 7 inches, is dark brown muck. The lower part, to a depth of 22 inches, is black muck. The upper part of the underlying material, to a depth of 28 inches, is very dark grayish brown fine sand. The next part, to a depth of 69 inches, is very dark brown and very dark grayish brown fine sand. The lower part, to a depth of 80 inches or more, is dark grayish brown fine sand.

The soils of minor extent in this map unit include Dorovan, Rutlege, Croatan, Lynn Haven, Scranton, Leon, and Pottsburg soils.

Most areas of this map unit support natural

vegetation or are used for the commercial production of pine. Many areas of this unit are not suited to most land uses. Ponding and low bearing strength are management concerns.

Soils on Flood Plains and Low Terraces along Rivers

The three general soil map units in this group consist of nearly level, somewhat poorly drained to very poorly drained soils that are subject to flooding. Some of these soils have a loamy surface layer and a clayey subsoil, some have sandy surface and subsurface layers and a loamy subsoil, some are clayey throughout, some are clayey and are underlain by loamy materials, some are organic throughout, and some are organic and are underlain by sandy materials.

10. Meggett-Ocilla

Nearly level, poorly drained and somewhat poorly drained soils that have a loamy surface layer and a clayey subsoil or that have a sandy surface layer and a loamy subsoil

This map unit is on low terraces adjacent to the flood plain along the Apalachicola River. The landscape has broad, nearly level areas that are lightly interspersed with low knolls and shallow depressions. Low, dissected ridges parallel the junction of the terrace and swamps on flood plains. The natural vegetation consists of cypress, red maple, water oak, cabbage palm, blackgum, sweetbay, river birch, and slash pine.

This map unit makes up about 4 percent of the county. It is about 50 percent Meggett soils, 20 percent Ocilla soils, and 30 percent soils of minor extent.

Meggett soils are poorly drained. The surface layer is dark grayish brown fine sandy loam to a depth of 5 inches. The upper part of the subsoil, to a depth of 15 inches, is grayish sandy clay loam. The next part, to a depth of 32 inches, is sandy clay. The lower part, to a depth of 80 inches or more, is clay.

Ocilla soils are somewhat poorly drained. The surface layer is very dark grayish brown loamy fine sand. The subsurface layer is yellowish brown loamy fine sand to a depth of 30 inches. The subsoil is light olive brown sandy clay loam to a depth of 64 inches. The underlying material is a stratified layer of sand and loamy sand to a depth of 80 inches or more.

The soils of minor extent in this map unit include Alapaha, Brickyard, Chowan, Croatan, Leefield, Meadowbrook, Pantego, Pelham, Plummer, and Wahee soils.

Most areas of this map unit are used as cropland. Although these soils are poorly suited to most cultivated crops because of wetness, restricted permeability, and flooding, the production of water-tolerant crops is possible. The restricted permeability in the subsoil of the Meggett soils is beneficial to the construction of shallow ponds.

This map unit is well suited to woodland. Wetness and occasional flooding are management concerns.

This map unit is poorly suited to urban development. Wetness, flooding, and restricted permeability are management concerns.

11. Brickyard-Chowan-Wahee

Nearly level, very poorly drained to somewhat poorly drained soils that have a surface layer of silty clay underlain by clayey layers or that have a surface layer of silt loam underlain by stratified loamy and organic layers

This map unit is on the flood plain along the Apalachicola River. The landscape has broad, nearly level swamps interspersed with low, elongated knolls and bordered by low, natural levees along the river and its distributaries. The natural vegetation consists of cypress, tupelos, sweetgum, river birch, slash pine, and cabbage palm and an understory of sawgrass and other water-tolerant plants.

This map unit makes up about 16 percent of the county. It is about 50 percent Brickyard soils, 20 percent Chowan soils, 5 percent Wahee soils, and 25 percent soils of minor extent.

Brickyard soils are poorly drained. The surface layer is very dark grayish brown and brown silty clay. The subsoil is brownish clay to a depth of 22 inches. The underlying material is brownish and grayish clay.

Chowan soils are very poorly drained. The surface layer is very dark grayish brown silt loam to a depth of 8 inches. Below this are stratified layers of loam, silty clay loam, and muck.

Wahee soils are somewhat poorly drained. The surface layer is dark brown silty clay to a depth of 5 inches. The upper part of the subsoil, to a depth of 33 inches, is olive clay. The next part, to a depth of 52 inches, is brownish and grayish clay. The lower part, to a depth of 80 inches, is grayish sandy clay loam.

The soils of minor extent in this map unit include Meadowbrook, Meggett, Ocilla, Kenner, Mantachie, Pamlico, Pickney, Maurepas, Rutlege, and Surrency soils.

Most areas of this map unit support natural vegetation. This map unit is not suited to most land uses. Frequent flooding and low bearing strength are management concerns.

Figure 4.—A typical landscape in the Corolla-Duckston-Kureb general soil map unit. The Corolla soils are on the low dunes adjacent to the swales. The Duckston soils are in the swales in the foreground. The Kureb soils are on the high dunes in the background.

12. Maurepas-Pamlico

Nearly level, very poorly drained soils that are organic throughout or that have an organic surface layer that is at least 16 inches thick and is underlain by fine sand or sand

This map unit is in broad marshes and swamps surrounding Lake Wimico and along connecting rivers and streams in the southern part of the county. The natural vegetation consists of a sparse overstory of cypress, tupelo gum, and slash pine and an understory of sawgrass and other water-tolerant grasses and shrubs.

This map unit makes up about 4 percent of the county. It is about 75 percent Maurepas soils, 10 percent Pamlico soils, and 15 percent soils of minor extent.

The upper part of the surface layer of the Maurepas soils, to a depth of 5 inches, is very dark brown muck. The lower part, to a depth of 80 inches, is black muck.

The upper part of the surface layer of the Pamlico soils, to a depth of 7 inches, is dark brown muck. The lower part, to a depth of 22 inches, is black muck. The underlying material is brownish and grayish fine sand to a depth of 80 inches or more.

The soils of minor extent in this map unit include Pickens, Croatan, and Chowan soils.

Most areas of this map unit support natural vegetation. This map unit generally is not suited to most land uses. Frequent flooding and low bearing strength are management concerns.

Soils on the Coastal Strand

The general soil map unit in this group consists of nearly level to steep, very poorly drained to excessively drained soils that are sandy throughout.

13. Corolla-Duckston-Kureb

Nearly level to steep, very poorly drained to excessively drained coastal soils that are sandy to a depth of 80 inches of more

This map unit is on dunes, swales, and flats on the coastal strand (fig. 4). The landscape is a repeating sequence of dunes and swales parallel to the coast. Beaches are common along the edges of this map unit where it meets the Gulf of Mexico or St. Joseph Bay. Primary dunes commonly are high, steep, and actively moving. Secondary dunes are broader than the primary dunes and are stabilized by vegetation. They are commonly less sloping than the primary dunes. Swales vary considerably in width and depth. Bayside flats are typically tidal marshes. Gulfside flats are low overwash plains that are subject to frequent, but not daily, flooding. They commonly merge with dune swales. Some gulfside flats are interspersed with low dune ridges or low, isolated dunes. One mapped area of this unit includes all of St. Joseph Peninsula and Indian Peninsula. The other mapped area is a narrow strip of land stretching from Beacon Hill to Highland View.

The natural vegetation is highly variable. In areas adjacent to the gulf or bay, the natural vegetation on dunes, swales, and flats consists of sparse populations of salt-tolerant grasses and scattered shrubs. In most of the protected areas, the natural vegetation consists of slash pine, live oak, myrtle oak, Chapman's oak, and rosemary and an understory of grasses and forbs.

This map unit makes up about 3 percent of the county. It is about 30 percent Corolla soils, 20 percent Duckston soils, 10 percent Kureb soils, and 40 percent soils of minor extent.

Corolla soils are somewhat poorly drained to moderately well drained. They are fine sand throughout. They are mostly white to a depth of 45 inches and are grayish below this depth.

Duckston soils are very poorly drained. The surface layer is black sand. The next layer is yellowish brown sand. The underlying material, to a depth of 80 inches or more, is light gray sand.

Kureb soils are excessively drained. The surface layer is gray fine sand. The subsurface layer is white fine sand to a depth of 12 inches. The subsoil is light yellowish brown fine sand to a depth of 35 inches. The underlying material, to a depth of 80 inches or more, is white fine sand.

The soils of minor extent in this map unit include Bayvi, Dirego, Leon, Lynn Haven, Mandarin, Maurepas, Newhan, Pottsburg, Resota, and Ridgewood soils.

Some areas of this map unit have been developed for homesites. The other areas support natural vegetation.

This map unit generally is not suited to cropland and woodland because of salt spray, shifting sands, coastal flooding, and wetness in the Duckston soils.

Most areas of this map unit are poorly suited to urban and recreational development. Flooding and wetness are management concerns.

Detailed Soil Map Units

The map units on the detailed soil maps at the back of this survey represent the soils in the survey area. The map unit descriptions in this section, along with the soil maps, can be used to determine the suitability and potential of a soil for specific uses. They also can be used to plan the management needed for those uses. More information on each map unit, or soil, is given under "Use and Management of the Soils."

Each map unit on the detailed soil maps represents an area on the landscape and consists of one or more soils for which the unit is named.

A symbol identifying the soil precedes the map unit name in the soil descriptions. Each description includes general facts about the soil and gives the principal hazards and limitations to be considered in planning for specific uses.

Soils that have profiles that are almost alike make up a soil series. Except for differences in texture of the surface layer or of the underlying material, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer or of the underlying material. They also can differ in slope, stoniness, salinity, wetness, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into soil phases. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Surrency mucky fine sand, depressional, is one of several phases in the Surrency series.

Some map units are made up of two or more major soils. These map units are called soil complexes or undifferentiated groups.

A soil complex consists of two or more soils in such an intricate pattern or in such small areas that they cannot be shown separately on the soil maps. The pattern and proportion of the soils are somewhat similar in all areas. Pickney-Pamlico complex, depressional, is an example.

An undifferentiated group is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretation can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Pickney and Rutlege soils, depressional, is an undifferentiated group in this survey area.

Most map units include small, scattered areas of soils other than those for which the map unit is named. Some of these included soils have properties that differ substantially from those of the major soil or soils. Such differences could significantly affect use and management of the soils. The included soils are identified in each map unit description. Some small areas of strongly contrasting soils are identified by a special symbol on the soil maps.

Table 3 gives the acreage and proportionate extent of each map unit. Other tables give properties of the soils and the limitations, capabilities, and potentials for many uses. The Glossary defines many of the terms used in describing the soils.

2—Albany sand

This very deep, somewhat poorly drained soil is on broad flats and knolls on the southern Coastal Plain. Slopes range from 0 to 2 percent. Individual areas are elongated or irregular in shape. They range from 5 to 100 acres in size.

Typically, the surface layer is very dark gray sand about 7 inches thick. The subsurface layer, to a depth of 41 inches, is loamy sand. It is light yellowish brown in the upper part and very pale brown in the lower part. The subsoil extends to a depth of 80 inches. In the upper part, it is light gray sandy loam that has brownish yellow and yellowish brown mottles. In the lower part, it is light gray sandy clay loam that has light olive brown, light reddish brown, and pink mottles.

Albany and similar soils make up 72 to 88 percent of the map unit in 80 percent of the areas mapped as Albany sand. Included in mapping are Blanton, Leefield, Ortega, Plummer, Ridgewood, and Sapelo soils. The moderately well drained Blanton and Ortega soils are on the higher ridges and knolls. Leefield soils are in positions similar to those of the Albany soil and have plinthite in the subsoil. The poorly drained

Plummer soils are in depressions. Ridgewood soils are sandy throughout. The poorly drained Sapelo soils are in slight depressions and along the edges of the lower depressions.

The seasonal high water table is at a depth of 12 to 30 inches from December through March. Available water capacity is low. Permeability is moderate or moderately slow in the subsoil.

This soil is in the North Florida Flatwoods ecological community (USDA, 1989). In most areas the natural vegetation includes slash pine, longleaf pine, live oak, laurel oak, and sweetgum and an understory of saw palmetto, huckleberry, greenbrier, and wiregrass.

Most areas of this soil are used for the commercial production of pine or for pasture.

This soil is suited to most cultivated crops. The main management concerns are periodic wetness, seasonal droughtiness, and wind erosion. A soil management system and a well designed irrigation system can increase yields. Returning all crop residue to the soil and using a cropping system that includes grasses, legumes, or a mixture of grasses and legumes help maintain fertility and tilth. A good ground cover of close-growing plants, reduced tillage, and the establishment of wind strips can help to control erosion. Planting water-tolerant crops and using shallow surface drainage ditches help to overcome the wetness.

This soil is suited to pasture and hay. Deep-rooted plants, such as improved bermudagrass and bahiagrass, are more drought tolerant if properly fertilized and limed. Overgrazing on this soil quickly reduces the extent of the plant cover and promotes the growth of undesirable species. Proper stocking rates, pasture rotation, and controlled grazing help to keep the soil and pasture in good condition.

This soil has high potential productivity for loblolly pine and slash pine. The main management concerns are a moderate equipment limitation, moderate seedling mortality, and moderate plant competition. Dry-season harvesting helps to overcome the equipment limitation and reduces the extent of compaction. Bedding helps to minimize the seedling mortality caused by wetness. Plant competition can be controlled by herbicides and prescribed burning. Chopping also helps to control competing vegetation and facilitates both hand planting and mechanical planting.

This soil is poorly suited to urban development. Wetness and seasonal droughtiness are management concerns. Septic tank absorption fields can be mounded to maintain the system above the seasonal high water table. Placement of suitable fill material can elevate building sites. Mulching, fertilizing, and irrigating help establish lawn grasses and other small-seeded plants. This soil is poorly suited to local roads and streets. Drainage and placement of suitable fill for elevating roadbeds can help to overcome wetness affecting road construction.

This soil is poorly suited to recreational development. Wetness and the sandy texture of the surface layer are management concerns. Placing suitable topsoil over the soil or resurfacing the sandy surface layer minimizes erosion and improves trafficability.

The capability subclass is IIIw. The woodland ordination symbol is 10W.

3—Alapaha loamy fine sand

This very deep, poorly drained soil is on broad flats and low knolls on the southern Coastal Plain. Slopes range from 0 to 2 percent. Individual areas are elongated or irregular in shape. They range from 5 to 100 acres in size.

Typically, the surface layer is black loamy fine sand about 6 inches thick. The subsurface layer is dark gray loamy fine sand to a depth of 22 inches. The subsoil extends to a depth of 80 inches. In the upper part, it is gray and light brownish gray fine sandy loam that has olive yellow mottles and has about 10 percent, by volume, plinthite. In the next part, it is light gray fine sandy loam that has yellowish brown and yellowish red mottles. In the lower part, it is gray sandy clay loam that has yellowish red and yellowish brown mottles.

Alapaha and similar soils make up 78 to 100 percent of the map unit in 95 percent of the areas mapped as Alapaha loamy fine sand. Included in mapping are Albany, Leefield, and Pelham soils. Albany and Leefield soils are on the lower knolls. The poorly drained Pelham soils are in landscape positions similar to those of the Alapaha soil and have less than 5 percent, by volume, plinthite in the subsoil.

The seasonal high water table is at the surface to a depth of 12 inches from December through May. Available water capacity is moderate. Permeability is moderately slow in the subsoil.

This soil is in the North Florida Flatwoods ecological community (USDA, 1989). In most areas the natural vegetation includes slash pine, water oak, and red maple and an understory of black titi, gallberry, scattered saw palmetto, and wiregrass.

Most areas of this soil are used for woodland. A few areas are used for cultivated crops, pasture, hay, or specialty crops.

This soil is poorly suited to most cultivated crops. Wetness is a management concern. If a water-control

system and soil improving measures are used, this soil is suited to a number of crops. A water-control system that removes excess water in wet seasons and provides surface irrigation in dry seasons helps to increase productivity. Seedbed preparation can include bedding of rows. Soil fertility management can increase yields.

This soil is suited to pasture and hay. Surface drainage helps remove excess water during wet periods and increases productivity. Management of fertility and proper selection of water-tolerant grasses and legumes help to ensure optimum yields. Proper stocking rates, pasture rotation, and restricted grazing during wet periods help to keep the pasture and soil in good condition.

This soil has high potential productivity for loblolly pine and slash pine. The main management concerns are a moderate equipment limitation and moderate plant competition. Using special equipment, such as equipment that has large rubber tires or crawler machinery, and harvesting during dry periods minimize the root damage caused by thinning operations and reduce the extent of compaction. Soil compaction restricts water infiltration, aeration, and root growth. Heavy thinning increases the windthrow hazard. Site preparation, such as harrowing and bedding, minimizes plant competition and seedling mortality and increases early growth.

This soil is not suited to urban or recreational development. Wetness is a severe limitation.

The capability subclass is Vw. The woodland ordination symbol is 11W.

4—Aquents, gently undulating

These somewhat poorly drained to very poorly drained, modified soils are on low landscapes adjacent to canals, coastal bays, and marshes and in shallow excavated areas. These soils formed in loamy and sandy dredge spoil, reworked natural soils, and fill of variable composition. In some areas they formed in the subsoil and underlying material where fill material had been excavated. Slopes generally range from 0 to 5 percent. Individual areas are elongated and generally rectangular in shape. They range from 3 to several hundred acres in size.

No single pedon is typical of this map unit. In a commonly encountered profile, the surface layer, to depth of 4 inches, is pale brown fine sand that contains shell fragments. The underlying material, to a depth of 28 inches, is very pale brown and light brownish gray fine sand that contains shell fragments and woody debris. A buried surface layer of black sandy muck extends to a depth of 39 inches. Below this to a depth of 80 inches are buried underlying layers of very dark gray and gray sand.

Aquents and similar soils make up 90 to 100 percent of the map unit in 95 percent of the areas mapped as Aquents, gently undulating. Included in mapping are gently undulating to steep, well drained soils on dikes and levees.

The chemical and physical characteristics of the Aquents are too variable to be adequately predicted without onsite investigation. In most areas the seasonal high water table is at the surface to a depth of 12 inches from June through November.

This map unit cannot be categorized into an ecological community. In many areas, the vegetation includes species that typically occur in abandoned sites in North Florida or it resembles that of plant communities on adjacent landscapes.

Most areas of this map unit are idle.

This map unit is not suited to cultivated crops, pasture, hay, or woodland. Wetness is a severe limitation.

This map unit is not suited to urban or recreational development. Wetness is a severe limitation.

The capability subclass is IVw. The woodland ordination symbol is 8W.

5—Bladen fine sandy loam

This very deep, poorly drained soil is on broad flats and in slight depressions on the southern Coastal Plain. Slopes range from 0 to 2 percent. Individual areas are elongated or irregular in shape. They range from 5 to 150 acres in size.

Typically, the surface layer is very dark grayish brown fine sandy loam about 5 inches thick. The subsurface layer, to a depth of 18 inches, is light brownish gray sandy loam. The subsoil extends to a depth of 80 inches. In the upper part, it is gray clay loam that has mottles in shades of red, yellow, and brown. In the lower part, it is light gray clay that has mottles in shades of yellow.

Bladen and similar soils make up 95 to 100 percent of the map unit in 95 percent of the areas mapped as Bladen fine sandy loam. Included in mapping are Pantego, Pelham, Rains, Surrency, and Wahee soils. The poorly drained Pantego soils are in slight depressions. Pelham soils are in positions similar to those of the Bladen soil and have a thicker sandy surface layer and a loamy subsoil. Rains soils are also in positions similar to those of the Bladen soil and have a loamy subsoil. The very poorly drained Surrency soils are in depressions. The somewhat poorly drained Wahee soils are on low knolls.

Figure 5.—An area of Bladen fine sandy loam. Planting loblolly pine or slash pine in raised beds is a common management practice in areas of this poorly drained soil.

The seasonal high water table is at the surface to a depth of 12 inches from December through May in most years. Available water capacity is moderate. Permeability is slow.

This soil is in the Pitcher Plant Bogs ecological community (USDA, 1989). In most areas the natural vegetation includes scattered slash pine, bay trees, and red maple and an understory of wiregrass, pitcher plants, and scattered black titi and St. Johnswort.

Most areas of this soil are used for the commercial production of pine or still support the natural vegetation.

This soil is not suited to cultivated crops. Wetness is a severe limitation.

This soil is poorly suited to pasture and hay. Wetness is a management concern. Drainage helps remove excess water during wet periods. Management of fertility and proper selection of water-tolerant grasses and legumes help to ensure optimum yields. Proper stocking rates, pasture rotation, and restricted grazing during wet periods help to keep the pasture and soil in good condition.

This soil has high potential productivity for loblolly pine, slash pine, and hardwoods. The main management concerns are a severe equipment limitation, severe seedling mortality, and moderate plant competition. Using special equipment, such as equipment that has large rubber tires or crawler machinery, and harvesting during dry periods minimize the root damage caused by thinning operations and reduce the extent of compaction. Site preparation, such as harrowing and bedding, reduces the seedling mortality rate (fig. 5). Avoiding heavy thinning can minimize the windthrow hazard. Plant competition can be minimized by herbicides and prescribed burning.

This soil is not suited to urban development.

Wetness, the slow permeability, and a moderate shrink-swell potential are severe limitations. This soil is not suited to local roads and streets. The wetness and low strength are severe limitations.

This soil is not suited to recreational development. Wetness is a severe limitation.

The capability subclass is VIw. The woodland ordination symbol is 9W.

6—Blanton sand, 0 to 5 percent slopes

This moderately well drained soil is on uplands on the southern Coastal Plain. Individual areas are irregular in shape. They range from 3 to 100 acres in size.

Typically, the surface layer is dark grayish brown sand about 7 inches thick. The subsurface extends to a depth of 60 inches. In the upper part, it is light yellowish brown sand. In the lower part, it is very pale brown sand. The subsoil extends to a depth of 80 inches. In the upper part, it is brownish yellow loamy sand that has pockets of sandy loam and has strong brown, light yellowish brown, and very pale brown mottles. In the lower part, it is light gray sandy loam that has strong brown mottles.

Blanton and similar soils make up 75 to 94 percent of the map unit in 90 percent of the areas mapped as Blanton sand, 0 to 5 percent slopes. Included in mapping are Albany, Leefield, Ridgewood, Ortega, and Stilson soils. The somewhat poorly drained Albany, Leefield, and Ridgewood soils are on the lower side slopes and in slight depressions. Ortega and Stilson soils are in landscape positions similar to those of the Blanton soil. Also included are soils that are similar to the Blanton soil but have thin, loamy bands below a depth of 40 inches or have plinthite in the subsoil.

The seasonal high water table is at a depth of 48 to 72 inches from March through August. It can be perched above the subsoil for short periods after heavy rains during any part of the year. Available water capacity is very low. Permeability is moderate or moderately slow in the subsoil.

This soil is in the Longleaf Pine-Turkey Oak Hills ecological community (USDA, 1989). In most areas the natural vegetation includes longleaf pine, slash pine, turkey oak, and live oak and an understory of wiregrass, ferns, huckleberry, and scattered saw palmetto.

Most areas of this soil are used for the commercial production of pine or for pasture.

This soil is poorly suited to cultivated crops. Droughtiness, rapid leaching of plant nutrients, and wind erosion are management concerns. A soil fertility management system and a well designed irrigation system can increase yields. Returning all crop residue to the soil and using a cropping system that includes grasses, legumes, or a grass-legume mixture help maintain fertility and tilth. A good ground cover of close-growing plants, reduced tillage, and the establishment of wind strips help to control wind erosion.

This soil is suited to pasture and hay. Droughtiness and rapid leaching of nutrients are management concerns. Deep-rooted plants, such as improved bermudagrass and bahiagrass, are more drought tolerant if properly fertilized and limed. Overgrazing on this soil quickly reduces the extent of the plant cover and promotes the growth of undesirable species. Proper stocking rates, pasture rotation, and controlled grazing help to keep the soil and pasture in good condition.

This soil is suited to slash pine, loblolly pine, and longleaf pine. The main management concerns are a moderate equipment limitation and moderate seedling mortality. Site preparation, such as applying herbicides and chopping, facilitates mechanical planting and minimizes the equipment limitation. Containerized stock can reduce the seedling mortality rate.

This soil is suited to urban development. Wetness is a management concern affecting septic tank absorption fields. The design and use of mound systems help to overcome the wetness. Mulching, fertilizing, and irrigating help to establish lawn grasses and other small-seeded plants and help to overcome droughtiness.

This soil is poorly suited to recreational development. The sandy texture of the surface layer is a management concern. Placing suitable topsoil or resurfacing the sandy surface layer minimizes erosion and improves trafficability.

The capability subclass is IIIs. The woodland ordination is 11S.

7—Bayvi and Dirego soils, frequently flooded

These very deep, very poorly drained soils are in salt marshes and tidal bays along the coast. Slopes are 0 to 1 percent. Individual areas are generally elongated. They range from 5 to 600 acres in size. The composition of this map unit is variable, but the mapping was sufficiently controlled to evaluate the soils for expected uses. Some areas consist mainly of one of the soils, and other areas contain both soils in variable proportions.

The Bayvi soil makes up about 45 percent of the

map unit. Typically, the surface layer extends to a depth of 26 inches. In the upper part, it is very dark brown fine sand. In the lower part, it is very dark grayish brown fine sand. The underlying material extends to a depth of 80 inches. In the upper part, it is dark gray fine sand that has light gray mottles. In the lower part, it is light brownish gray fine sand.

The Dirego soil makes up about 40 percent of the map unit. Typically, the surface layer extends to a depth of 19 inches. In the upper part, it is very dark grayish brown muck. In the lower part, it is very dark brown muck. The underlying material extends to a depth of 80 inches. In the upper part, it is dark brown mucky sand. In the lower part, it is grayish brown sand that has dark grayish brown mottles.

Bayvi, Dirego, and similar soils make up 85 to 100 percent of the map unit in 95 percent of the areas mapped as Bayvi and Dirego soils, frequently flooded. Included in mapping are poorly drained Duckston and Leon soils. Duckston soils are on the edges of tidal marshes on low coastal flats. Leon soils are in the slightly higher positions and have dark subsoil layers. Also included are soils that are similar to the Bayvi soil but have either a thin surface layer or a loamy underlying layer.

The water table is at the surface to a depth of 12 inches year around. Flooding occurs daily during normal high tides. Available water capacity is very low. Permeability is very rapid in the Bayvi soil and rapid in the Dirego soil. The Bayvi soil is very slightly saline to strongly saline. The Dirego soil is strongly saline. The content of sulfur in the surface layer of the Dirego soil ranges from 0.75 to 5.5 percent.

These soils are in the Salt Marsh ecological community (USDA 1989). In most areas the natural vegetation includes black needlerush, marshhay cordgrass, and smooth cordgrass. Nearly all areas of these soils support the natural vegetation.

These soils are not suited to cultivated crops, pasture, hay, or woodland. Tidal flooding, salinity, and wetness are severe limitations.

These soils are not suited to urban or recreational development. Wetness, the flooding, excess salt, and subsidence in the Dirego soil are severe limitations.

The capability subclass is VIIIw. A woodland ordination symbol has not been assigned.

8—Beaches

Beaches are narrow strips of nearly level, mixed deposits of sand and shell fragments along the Gulf of Mexico and adjacent bays. Beaches range in width from less than 100 feet to more than 300 feet. As much as half of a mapped area may be flooded daily by high tides, and all of the area can be flooded by storm tides. The most extensive areas of this map unit are on the coast near Cape San Blas, St. Joe Peninsula, and St. Joe Beach. Slopes range from 0 to 2 percent.

Beaches typically consist of loose, gray and white fine sand or sand containing various quantities of broken shells throughout. Shell fragments are mostly sand sized but may be larger in some parts of the profile. Layers differ primarily in color or in shell content. Some profiles appear uniform throughout.

Included in mapping are small areas of Corolla and Duckston soils. These soils are on the landward edges of the mapped areas. The moderately well drained Corolla soils are on low dunes. The poorly drained and very poorly drained Duckston soils are in swales.

Beaches are partly or entirely covered by saltwater daily during high tides and are subject to movement by the wind and tide. The water table is dependent on tide and elevation and is too variable to predict. Permeability generally is rapid or very rapid.

This map unit is not categorized into an ecological community. Most areas either do not have vegetation or are only sparsely vegetated by salt-tolerant plants.

This map unit is not suited to agriculture or woodland.

Beaches are used intensively for recreation. Although homes and commercial buildings have been built on the edges of mapped areas in many places, Beaches are not suitable for homesite development, small commercial buildings, or local roads and streets because of the frequent tidal flooding and the instability of the land surface.

The capability subclass is VIIIw. A woodland ordination symbol has not been assigned.

9—Ridgewood fine sand

This very deep, somewhat poorly drained soil is on slightly convex knolls on the southern Coastal Plain. Slopes range from 0 to 2 percent. Individual areas are elongated or irregular in shape. They range from 5 to 100 acres in size.

Typically, the surface layer is dark grayish brown fine sand about 5 inches thick. The underlying material extends to a depth of 80 inches or more. In the upper part, it is brownish yellow fine sand that has yellowish brown mottles. In the lower part, it is white fine sand that has light brownish gray mottles.

Ridgewood and similar soils make up 82 to 100 percent of the map unit in 95 percent of the areas mapped as Ridgewood fine sand. Included in mapping

are Albany, Ortega, Plummer, and Scranton soils. Albany soils have a loamy subsoil. The moderately well drained Ortega soils are on knolls and ridges. The poorly drained Plummer and Scranton soils are on low flats and in slight depressions.

The seasonal high water table generally is at a depth of 24 to 42 inches from June through November. It can, however, rise to a depth of 15 to 24 inches for brief periods. Available water capacity is low or very low. Permeability is rapid throughout.

This soil is in the North Florida Flatwoods ecological community (USDA, 1989). In most areas the natural vegetation includes slash pine, longleaf pine, and scattered oaks and an understory of wiregrass and scattered saw palmetto.

Most areas of this soil are used for the commercial production of pine or for pasture.

This soil is poorly suited to most cultivated crops. Wetness, seasonal droughtiness, leaching of plant nutrients, and wind erosion are management concerns. A soil fertility management system and a well designed irrigation system can increase yields. Returning all crop residue to the soil and using a cropping system that includes grasses, legumes, or a grass-legume mixture help maintain fertility and tilth. A good ground cover of close-growing plants, reduced tillage, and the establishment of wind strips help to control wind erosion.

This soil is suited to pasture and hay. Deep-rooted plants, such as improved bermudagrass and bahiagrass, are more drought tolerant if properly fertilized and limed. Overgrazing on this soil quickly reduces the extent of the plant cover and promotes the growth of undesirable species. Proper stocking rates, pasture rotation, and controlled grazing help to keep the soil and pasture in good condition.

This soil has medium potential productivity for slash pine and longleaf pine. The main management concerns are a moderate equipment limitation, moderate seedling mortality, and moderate plant competition. Plant competition can be controlled by herbicides and prescribed burning.

This soil is moderately suited to urban development. Wetness, rapid permeability, and occasional droughtiness are management concerns. Because of the rapid permeability, careful selection of onsite waste disposal areas is needed to prevent contamination of shallow ground water. This management concern should preclude the practice of clustering homes close together or installing the disposal site adjacent to any body of water. Septic tank absorption fields can be mounded to maintain the system above the seasonal high water table. Mulching, fertilizing, and irrigating help establish lawn grasses and other small-seeded plants.

This soil is moderately suited to local roads and streets. Drainage and placement of suitable fill for elevating roadbeds can help to overcome wetness affecting road construction. This soil is also only moderately suited to small commercial buildings because of the wetness. Placement of suitable fill material can elevate building sites.

If this soil is used as a site for recreational development, such as playgrounds, picnic areas, and paths or trails, placing suitable topsoil over the soil or resurfacing the sandy areas can minimize erosion and improve trafficability.

The capability subclass is IVs. The woodland ordination symbol is 10W.

10—Corolla fine sand, 1 to 5 percent slopes

This very deep, moderately well drained and somewhat poorly drained soil is on nearly level flats, on small dunes, and in swales on large dunes along the gulf coast beaches. Slopes generally are less than 3 percent but range to 5 percent. Individual areas are narrow and elongated. They range from 5 to 100 acres in size.

Typically, the surface layer is very pale brown fine sand about 4 inches thick. The upper part of the substratum, to a depth of 24 inches, is very pale brown fine sand. Below this, from a depth of 24 to 29 inches, is a buried surface horizon of light gray fine sand that has black pockets and streaks. The next part of the substratum, from a depth of 29 to 45 inches, is white fine sand. It has mottles in shades of brown below a depth of 39 inches. Below this, from a depth of 45 to 52 inches, is a second buried surface horizon of very dark gray fine sand. The lower part of the substratum, to a depth of 80 inches, is light gray and gray sand that has black pockets and streaks.

Corolla and similar soils make up 75 to 100 percent of the map unit in 95 percent of the areas mapped as Corolla fine sand, 1 to 5 percent slopes. Included in mapping are Beaches and Duckston, Kureb, Newhan, and Resota soils. The poorly drained Beaches are on low flats adjacent to the gulf and bays. The poorly drained and very poorly drained Duckston soils are in low swales and on low, broad flats. The excessively drained Kureb soils and the moderately well drained Resota soils are on high, stable, remnant dunes. The excessively drained Newhan soils are on high coastal dunes.

The seasonal high water table is at a depth of 18 to

36 inches from November through May. Available water capacity is very low. Permeability is very rapid throughout.

This soil is in the North Florida Coastal Strand ecological community (USDA, 1989). In most areas the natural vegetation includes slash pine, longleaf pine, and live oak and an understory of wiregrass and scattered saw palmetto. The mapped areas nearest to the gulf coast commonly do not have trees and are sparsely vegetated with seaoats, other beach grasses, and scattered shrubs.

Many areas of this soil have been used for homesite development.

This soil is not suited to cultivated crops, pasture, or woodland because of low fertility, salt spray, and shifting sands and because the soil is located so near to the coast.

This soil is poorly suited to urban development, small commercial buildings, and local roads and streets. Wetness, droughtiness, flooding during storm tides, shifting sands, and very rapid permeability are management concerns. In areas used for septic tank absorption fields, the effective depth to the seasonal high water table can be lowered by constructing a filter mound of suitable soil material. In areas used as homesites, filling can help to overcome the wetness. Because of the very rapid permeability and the location of the soil near the coast, septic systems should be installed only for low-density use. Mulching, fertilizing, and irrigating help establish lawn grasses and other small-seeded plants. Care should be taken to protect the natural vegetation because it helps to control the erosion caused by coastal winds. Salt- and drought-tolerant plants are the best-adapted plants for landscaping.

If this soil is used as a site for recreational development, such as playgrounds, picnic areas, and paths or trails, placing suitable topsoil over the soil or resurfacing the sandy areas can minimize erosion and improve trafficability. Access walkways can limit foot traffic in areas where natural vegetation grows and stabilizes the soil.

The capability subclass is VIIs. A woodland ordination symbol has not been assigned.

11—Clarendon loamy fine sand, 2 to 5 percent slopes

This very deep, moderately well drained soil is on low uplands on the southern Coastal Plain. Individual areas are blocky or irregular in shape. They range from 3 to 30 acres in size.

Typically, the surface layer is very dark gray loamy fine sand about 6 inches thick. The subsurface layer is grayish brown loamy fine sand to a depth of 10 inches. The subsoil extends to a depth of 80 inches. In sequence downward, it is light yellowish brown fine sandy loam; very pale brown sandy clay loam; mixed yellowish, grayish, and reddish sandy clay loam; and mixed yellowish, grayish, and reddish sandy clay. The subsoil contains soft and hard nodules of iron oxide.

Clarendon and similar soils make up 95 to 100 percent of the map unit in 95 percent of the areas mapped as Clarendon loamy fine sand, 2 to 5 percent slopes. Included in mapping are Wahee soils and a poorly drained soil that is similar to the Clarendon soil but has less clay in the subsoil. The poorly drained inclusion is in slight depressions. The somewhat poorly drained Wahee soils have a clayey subsoil. They are in landscape positions similar to those of the Clarendon soils.

The seasonal high water table is at a depth of 24 to 36 inches from December through March. Available water capacity is moderate. Permeability is moderately slow.

This soil is in the Mixed Hardwood-Pine ecological community (USDA, 1989). In most areas the natural vegetation includes slash pine, longleaf pine, live oak, laurel oak, post oak, dogwood, and sweetgum and an understory of saw palmetto, blackberry, and wiregrass.

Most areas of this soil are used for the commercial production of pine.

This soil is well suited to the production of most cultivated crops. It is classified as prime farmland. A soil fertility management system can increase yields. Returning all crop residue to the soil and using a cropping system that includes grasses, legumes, or a grass-legume mixture help maintain fertility and tilth.

This soil is well suited to pasture and hay plants, such as improved bermudagrass, bahiagrass, and legumes. Controlled grazing helps to keep the plants vigorous. Proper stocking rates, pasture rotation, and controlled grazing help to keep the soil and pasture in good condition.

This soil has high potential productivity for loblolly pine. The main management concerns are moderate seedling mortality and moderate plant competition. Plant competition can be controlled by herbicides and prescribed burning. The content of organic matter in the surface layer commonly is very low. Logging systems that leave residue on the site can improve fertility.

This soil is poorly suited to urban development, small commercial buildings, and local roads and streets. Wetness and the moderately slow permeability in the subsoil are management concerns. Septic tank absorption fields can be mounded to maintain the

system above the seasonal high water table. The absorption field can be enlarged to accommodate the restricted permeability. This soil is well suited to lawns and landscaping. Fertilizing helps establish lawn grasses and other small-seeded plants.

If this soil is used as a site for recreational development, such as playgrounds, picnic areas, and paths or trails, placing suitable topsoil over the soil or resurfacing the sandy areas can minimize erosion and improve trafficability.

The capability subclass is IIe. The woodland ordination symbol is 9W.

12—Dothan-Fuquay complex, 5 to 8 percent slopes

These very deep, well drained soils are on uplands on the southern Coastal Plain. This map unit consists of about 60 percent Dothan soil and 30 percent Fuquay soil. Individual areas of these soils are so intermingled on the landscape that it was impractical to separate them at the scale selected for mapping. Mapped areas are blocky or irregular in shape and range from 3 to 100 acres in size.

Typically, the surface layer of the Dothan soil is dark grayish brown loamy sand about 9 inches thick. The subsurface layer is light yellowish brown loamy sand to a depth of 16 inches. The upper part of the subsoil, to a depth of 33 inches, is yellowish brown fine sandy loam. The lower part of the subsoil, to a depth of 80 inches or more, is sandy clay loam that is reticulately mottled in shades of gray, brown, yellow, and red.

Typically, the surface layer of the Fuquay soil is dark gray loamy fine sand about 7 inches thick. The subsurface layer is light yellowish brown loamy fine sand to a depth of 21 inches. The subsoil extends to a depth of 80 inches. In the upper part, it is brownish yellow fine sandy loam. In the next part, it is brownish yellow sandy clay loam. In the lower part, it is mixed light gray, reddish brown, dark yellowish brown, and light olive brown sandy clay loam.

Dothan, Fuquay, and similar soils make up 95 to 100 percent of the map unit in 95 percent of the areas mapped as Dothan-Fuquay complex, 5 to 8 percent slopes. Included in mapping are Leefield, Rains, and Wahee soils. The somewhat poorly drained Leefield and Wahee soils are on toeslopes. The poorly drained Rains soils are in depressions.

The seasonal high water table is perched at a depth of 36 to 60 inches from January through April in the Dothan soil and at a depth of 48 to 72 inches from January through March in the Fuquay soil. Available water capacity is moderate. Permeability is moderately slow in the Dothan soil and slow in the Fuquay soil.

These soils are in the Mixed Hardwood-Pine ecological community (USDA, 1989). In most areas the natural vegetation includes slash pine, longleaf pine, live oak, laurel oak, post oak, dogwood, and sweetgum and an understory of saw palmetto, blackberry, and wiregrass.

Most areas of these soils are used for the commercial production of pine.

These soils are moderately suited to most cultivated crops. The main limitation is the slope. Erosion-control measures are needed. Planting on the contour, alternating strips of close-growing crops with row crops, using a crop rotation that includes close-growing crops at least two-thirds of the time, and leaving crop residue on the surface help to control erosion. A soil fertility management system can increase yields.

These soils are well suited to pasture and hay plants, such as improved bermudagrass, bahiagrass, and legumes. Controlled grazing helps to keep the plants vigorous. Proper stocking rates, pasture rotation, and controlled grazing help to keep the soils and pasture in good condition.

These soils have high potential productivity for loblolly pine and slash pine. The main management concerns are a moderate equipment limitation, moderate seedling mortality, and moderate plant competition. Plant competition can be controlled by herbicides and prescribed burning. The content of organic matter in the surface layer commonly is very low. Logging systems that leave residue on the site can improve fertility.

These soils are moderately suited to urban development. The main limitations are the seasonal high water table and the restricted permeability in the subsoil. Septic tank absorption fields can be mounded to maintain the system above the subsoil, or they can be enlarged to accommodate the restricted permeability. They can also be placed on contour. These soils are well suited to lawns and landscaping. Fertilizing helps establish lawn grasses and other small-seeded plants.

These soils are moderately suited to small commercial buildings and local roads and streets. Slope and the restricted permeability are management concerns. The slope can be reduced by cutting and filling. The amount of runoff can be reduced by limiting the extent of impermeable surfaces, such as parking lots. Vegetated islands, grassed swales, and well-designed water conveyance structures can also help to control runoff.

If these soils are used as sites for recreational

development, such as playgrounds, picnic areas, and paths or trails, placing suitable topsoil over the soils or resurfacing the sandy areas can minimize erosion and improve trafficability.

The capability subclass is IIIe in areas of the Dothan soil and IIIs in areas of the Fuquay soil. The woodland ordination symbol is 9A in areas of the Dothan soil and 8S in areas of the Fuquay soil.

13—Dorovan-Croatan complex, depressional

These very deep, very poorly drained soils are in depressions. Slopes range from 0 to 2 percent. This map unit consists of about 55 percent Dorovan soil and 40 percent Croatan soil. Individual areas of these soils are so intermingled on the landscape that it was impractical to separate them at the scale selected for mapping. Mapped areas are irregular in shape and range from 10 to 500 acres in size.

Typically, the upper part of the surface layer of the Dorovan soil, to a depth of 2 inches, is very dark brown mucky peat. The lower part, to a depth of 54 inches, is black and very dark gray muck. The underlying material is gray sand to a depth of 80 inches or more.

Typically, the upper part of the surface layer of the Croatan soil, to a depth of 42 inches, is dark brown, very dark brown, and very dark grayish brown muck. The lower part of the surface layer, to a depth of 46 inches, is very dark grayish brown mucky sandy loam. The substratum extends to a depth of 80 inches. It is grayish brown sandy clay loam in the upper part and gray clay loam in the lower part.

Dorovan, Croatan, and similar soils make up 85 to 100 percent of the map unit in 90 percent of the areas mapped as Dorovan-Croatan complex, depressional. Included in mapping are very poorly drained Pantego and Surrency soils on slight rises, commonly near the edges of the mapped areas.

The seasonal high water table is 12 inches above the surface to a depth 6 inches year around in the Dorovan soil and at the surface to a depth of 12 inches from November through May in the Croatan soil. Permeability is moderate in the Dorovan soil and moderately slow in the Croatan soil.

These soils are in the Swamp Hardwoods ecological community (USDA, 1989). In most areas the natural vegetation includes blackgum, cypress, sweetbay, swamp tupelo, black titi, sawgrass, and scattered slash pine. Most areas still support the natural vegetation. Areas of these soils provide cover for deer and excellent habitat for wading birds and other wetland wildlife.

These soils are not suited to cultivated crops, woodland, pasture, hay, or urban or recreational development. Ponding, wetness, and low bearing strength are severe limitations.

The capability subclass is VIIw. A woodland ordination symbol has not been assigned.

14—Duckston-Duckston, depressional, complex, frequently flooded

These poorly drained and very poorly drained, very deep soils are on level flats adjacent to coastal dunes and marshes and in low dune swales. The poorly drained Duckston soil is on broad flats between dune ridges. The very poorly drained Duckston, depressional, soil is in closed or seasonally closed depressions on the broad flats or in low, flat areas that are transitional to the coastal marshes. Slopes range from 0 to 2 percent. This map unit consists of about 60 percent poorly drained Duckston soil and 35 percent very poorly drained Duckston, depressional, soil. Individual areas are so intermingled on the landscape that it was impractical to separate them at the scale selected for mapping. Mapped areas are elongated in shape and range from 5 to 50 acres in size.

Typically, the surface layer of the Duckston soil is very dark gray sand about 2 inches thick. The substratum extends to a depth of 80 inches. In the upper part, it is light brownish gray sand. In the lower part, it is light gray sand that has 5 to 10 percent, by volume, shell fragments.

Typically, the surface layer of the Duckston, depressional, soil is black mucky sand about 2 inches thick. The substratum extends to a depth of 80 inches. It is light brownish gray sand in the upper part and white sand in the lower part.

Duckston and similar soils make up 75 to 100 percent of the map unit in 95 percent of the areas mapped as Duckston-Duckston, depressional, complex, frequently flooded. Included in mapping are somewhat poorly drained Corolla soils in the higher positions on low dunes.

The poorly drained Duckston soil has a continuous high water table at the surface to a depth of 6 inches year around. The very poorly drained Duckston, depressional, soil has a continuous high water table 12 inches above the surface to the surface year around. The depth to the water table fluctuates slightly because of the tides. Flooding is likely when heavy rain occurs in combination with high tides or during strong coastal storms. Some areas are flooded by high tides several times each month. Available water capacity is very low. Permeability is very rapid throughout.

These soils are dominantly in the Salt Marsh

ecological community (USDA, 1989). They are also in the North Florida Coastal Strand ecological plant community, primarily in areas buffered by high sand dunes. The vegetation in these areas resembles the hammock component of the ecological plant community. In most areas, this hammock vegetation includes cabbage palm, eastern redcedar, live oak, laurel oak, slash pine, gallberry, wax-myrtle, scattered saw palmetto, fetterbush, and marshay cordgrass. The soils are in the Salt Marsh ecological plant community primarily in areas that are unprotected by high sand dunes. The vegetation in these areas is dominantly marshay cordgrass, seaoats, gulf muhly, sand cordgrass, and various other low grasses and widely scattered slash pine and shrubs. Most areas of this unit still support the natural vegetation and are managed for recreation and wildlife habitat.

A few areas of these soils have been developed for home and building sites. These soils are not suited to cultivated crops, woodland, pasture, or hay. Ponding, wetness, and the flooding are severe limitations.

Areas of the very poorly drained and poorly drained Duckston soils are not suited to urban development. Ponding, wetness, and the flooding are severe limitations.

If these soils are used as sites for recreational development, such as playgrounds, picnic areas, and paths or trails, placing suitable topsoil over the soils or resurfacing the sandy areas can minimize erosion and improve trafficability.

The capability subclass is Vw in areas of the poorly drained Duckston soil and VIIw in areas of the very poorly drained Duckston, depressional, soil. The woodland ordination symbol is 7W.

15—Wahee fine sandy loam

This very deep, poorly drained soil is on terraces on the southern Coastal Plain. Slopes range from 0 to 2 percent. Individual areas are elongated or irregular in shape and range from 5 to 150 acres in size.

Typically, the surface layer is dark grayish brown fine sandy loam about 5 inches thick. The subsurface layer is light yellowish brown loamy fine sand to a depth of 12 inches. The upper part of the subsoil, to a depth of 43 inches, is light yellowish brown sandy clay. The lower part, to a depth of 72 inches, is light gray sandy clay. The underlying material is grayish brown sandy loam to a depth of 80 inches or more.

Wahee and similar soils make up 75 to 95 percent of the map unit in 80 percent of the areas mapped as Wahee fine sandy loam. Included in mapping are Bladen, Clarendon, and Leefield soils. The poorly drained Bladen soils are in landscape positions similar to those of the Wahee soil. The moderately well drained Clarendon soils are on knolls. The somewhat poorly drained Leefield soils are on low knolls.

The seasonal high water table is at a depth of 6 to 18 inches from December through March. Available water capacity is moderate. Permeability is moderately slow.

This soil is in the Mixed Hardwood-Pine ecological community (USDA, 1989). In most areas the natural vegetation includes slash pine, longleaf pine, water oak, live oak, sweetgum, dogwood, and red maple and an understory of saw palmetto and wiregrass.

Most areas of this soil are used for the commercial production of pine or still support the natural vegetation.

This soil is moderately suited to most cultivated crops. Wetness is a management concern. A water-control system helps remove excess water in wet seasons and provides surface irrigation in dry seasons. Crop residue management and soil improving crops help maintain the content of organic matter and tilth. Seedbed preparation can include bedding of rows. A soil fertility management system can increase yields.

This soil is well suited to pasture and hay. Drainage helps remove excess water during wet periods. Management of fertility and proper selection of adapted grasses and legumes help to ensure optimum yields. Proper stocking rates, pasture rotation, and restricted grazing during wet periods help to keep the pasture and soil in good condition.

This soil has high potential productivity for loblolly pine and slash pine. The main management concerns are a moderate equipment limitation, moderate seedling mortality, and severe plant competition. Site preparation, such as harrowing and bedding, reduces the seedling mortality rate and increases early growth. Using special equipment, such as equipment that has large rubber tires or crawler machinery, and harvesting during dry periods minimize the root damage caused by thinning operations and reduce the extent of compaction. Soil compaction restricts water infiltration, aeration, and root growth.

This soil is poorly suited to urban development. Wetness, restricted permeability, and the moderate shrink-swell potential in the subsoil are management concerns. Septic tank absorption fields can be mounded to maintain the system above the seasonal high water table and the subsoil. Housing pads can be elevated using suitable fill material. Onsite investigation is needed to determine if special structural precautions can prevent the damage caused by shrinking and swelling of the soil. If adequate water

outlets are available, an area drainage system can lower the water table. A drainage system and adapted plant species can help in the establishment of lawns and landscaping.

This soil is poorly suited to local roads and streets and to small commercial buildings. Wetness and a moderate shrink-swell potential in the subsoil are management concerns. A drainage system and placement of suitable fill for elevating roadbeds can help to overcome the wetness. Onsite investigation is needed to determine if special precautions can prevent the damage caused by shrinking and swelling of the subsoil.

If this soil is used as a site for recreational development, such as playgrounds, picnic areas, and paths or trails, placing suitable topsoil over the soil or resurfacing the sandy areas can minimize erosion and improve trafficability.

The capability subclass is IIw. The woodland ordination symbol is 9W.

16—Ortega fine sand, 0 to 5 percent slopes

This very deep, moderately well drained soil is on uplands. Individual areas are irregular in shape and range from 5 to 50 acres in size.

Typically, the surface layer is gray fine sand about 7 inches thick. The upper part of the underlying material, to a depth of 38 inches, is brownish yellow fine sand. The next part, to a depth of 61 inches, is light yellowish brown fine sand. The lower part, to a depth of 80 inches or more, is very pale brown fine sand.

Ortega and similar soils make up 80 to 100 percent of the map unit in 80 percent of the areas mapped as Ortega fine sand, 0 to 5 percent slopes. Included in mapping are somewhat poorly drained Albany, Ridgewood, and Mandarin soils in slight depressions.

The seasonal high water table is at a depth of 42 to 60 inches from June through January. Available water capacity is very low. Permeability is rapid throughout.

This soil is in the Longleaf Pine-Turkey Oak Hills ecological community (UDSA, 1989). In most areas the natural vegetation includes longleaf pine, slash pine, and turkey oak and an understory of wiregrass and scattered saw palmetto.

Most areas of this soil are used for the commercial production of pine.

This soil is poorly suited to most cultivated crops. Droughtiness, rapid leaching of plant nutrients, and wind erosion are management concerns. A soil fertility management system and a well designed irrigation system can increase yields. Returning all crop residue to the soil and using a cropping system that includes grasses, legumes, or a grass-legume mixture help maintain fertility and tilth. A good ground cover of close-growing plants, reduced tillage, and the establishment of wind strips help to control wind erosion.

This soil is suited to pasture and hay. Droughtiness and rapid leaching of nutrients are the main limitations. Deep-rooted plants, such as improved bermudagrass and bahiagrass, are more drought tolerant if properly fertilized and limed. Overgrazing on this soil quickly reduces the extent of the plant cover and promotes the growth of undesirable species. Proper stocking rates, pasture rotation, and controlled grazing help to keep the soil and pasture in good condition.

This soil has medium potential productivity for slash pine, loblolly pine, and long leaf pine. The main management concerns are a moderate equipment limitation, moderate seedling mortality, and moderate plant competition. Site preparation, such as applying herbicides and chopping, facilitates mechanical planting. Plant debris left on the site helps to maintain the content of organic matter. Containerized stock can reduce the seedling mortality rate.

This soil is well suited to homesite development. Because of the rapid permeability, however, careful selection of onsite waste disposal areas is needed to prevent contamination of shallow ground water. This management concern should preclude the practice of clustering homes close together or installing the disposal site adjacent to any body of water. Mulching, fertilizing, and irrigating help establish lawn grasses and other small-seeded plants.

This soil is well suited to small commercial buildings and to local roads and streets.

If this soil is used as a site for recreational development, such as playgrounds, picnic areas, and paths or trails, placing suitable topsoil over the soil or resurfacing the sandy areas can minimize erosion and improve trafficability.

The capability subclass is IIIs. The woodland ordination symbol is 10S.

17—Fuquay loamy fine sand

This very deep, well drained soil is on uplands. Slopes range from 0 to 2 percent. Individual areas are elongated or irregular in shape and range from 3 to 50 acres in size.

Typically, the surface layer is dark gray loamy fine sand about 7 inches thick. The subsurface layer is light yellowish brown loamy fine sand to a depth of 21 inches. The upper part of the subsoil, to a depth of 27

inches, is brownish yellow fine sandy loam. The next part, to a depth of 52 inches, is brownish yellow sandy clay loam. The lower part, to a depth of 80 inches or more, is light gray, reddish brown, dark yellowish brown, and light olive brown sandy clay loam.

Fuquay and similar soils make up 68 to 92 percent of the map unit in 80 percent of the areas mapped as Fuquay loamy fine sand. Included in mapping are moderately well drained Blanton, Clarendon, and Stilson soils. Blanton soils are in landscape positions similar to those of the Fuquay soil. Clarendon and Stilson soils are in slightly depressional areas on flats.

A seasonal high water table is perched in the subsoil at a depth of 48 to 72 inches for short periods after heavy rains. Available water capacity is moderate. Permeability is slow.

This soil is in the Mixed Hardwood-Pine ecological community (USDA, 1989). In most areas the natural vegetation includes live oak and longleaf pine and an understory of wiregrass, ferns, huckleberry, and scattered saw palmetto.

Most areas of this soil are used for the commercial production of pine or for cultivated crops.

This soil is moderately suited to most cultivated crops. Droughtiness is a management concern. Irrigation can help to overcome the droughtiness during extended dry periods. A soil fertility management system can increase yields. Returning all crop residue to the soil and using a cropping system that includes grasses, legumes, or a grass-legume mixture help maintain fertility and tilth.

This soil is suited to pasture and hay. Proper stocking rates, pasture rotation, and controlled grazing help to keep the soil and pasture in good condition.

This soil has high potential productivity for loblolly pine, longleaf pine, and slash pine. The main management concerns are a moderate equipment limitation, moderate seedling mortality, and moderate plant competition. Careful site preparation, such as chopping, minimizes debris, helps to control competing vegetation, and facilitates hand planting and mechanical planting. The content of organic matter in the surface layer commonly is very low. Logging systems that leave residue on the site can improve fertility.

This soil is well suited to homesite development. Septic tank absorption fields can be mounded to maintain the system above the slowly permeable layers or can be enlarged to accommodate the slow permeability. Mulching, fertilizing, and irrigating help establish lawn grasses and other small-seeded plants.

This soil is well suited to small commercial buildings and to local roads and streets.

If this soil is used as a site for recreational development, such as playgrounds, picnic areas, and paths or trails, placing suitable topsoil over the soil or resurfacing the sandy areas can minimize erosion and improve trafficability.

The capability subclass is IIs. The woodland ordination symbol is 8S.

19—Lucy loamy fine sand, 0 to 5 percent slopes

This very deep, well drained soil is on uplands. Individual areas are elongated or irregular in shape and range from 3 to 50 acres in size.

Typically, the surface layer is very dark grayish brown loamy fine sand about 9 inches thick. The subsurface layer is yellowish brown loamy fine sand to a depth of 30 inches. The upper part of the subsoil, to a depth of 37 inches, is strong brown sandy loam. The lower part, to a depth of 80 inches or more, is yellowish red sandy clay loam.

Lucy and similar soils make up 62 to 97 percent of the map unit in 80 percent of the areas mapped as Lucy loamy fine sand, 0 to 5 percent slopes. Included in mapping are Blanton, Dothan, and Stilson soils. The moderately well drained Blanton and Stilson soils and the well drained Dothan soils are on upland side slopes and in very slight depressions. Also included are soils that are similar to the Lucy soil but have a loamy subsoil below a depth of 40 inches.

A seasonal high water table does not occur within a depth of 72 inches in most years. A water table can be perched above the subsoil for short periods after heavy rains. Available water capacity is moderate. Permeability is also moderate.

This soil is in the Mixed Hardwood-Pine ecological community (USDA, 1989). In most areas the natural vegetation includes live oak and longleaf pine and an understory of wiregrass, ferns, huckleberry, and scattered saw palmetto.

Most areas of this soil are used for the commercial production of pine.

This soil is moderately suited to most cultivated crops. Droughtiness is a management concern. Irrigation can help to overcome the droughtiness during extended dry periods. A soil fertility management system can increase yields. Returning all crop residue to the soil and using a cropping system that includes grasses, legumes, or a grass-legume mixture help maintain fertility and tilth.

This soil is well suited to pasture and hay. Proper stocking rates, pasture rotation, and controlled grazing help to keep the soil and pasture in good condition.

This soil has high potential productivity for slash

pine, longleaf pine, and loblolly pine. The main management concerns are a moderate equipment limitation, moderate seedling mortality, and moderate plant competition. Careful site preparation, such as chopping, minimizes debris, helps to controls competing vegetation, and facilitates hand planting and mechanical planting. The content of organic matter in the surface layer commonly is very low. Logging systems that leave residue on the site can improve fertility.

This soil is well suited to homesite development. Mulching, fertilizing, and irrigating help establish lawn grasses and other small-seeded plants.

This soil is well suited to small commercial buildings and to local roads and streets.

If this soil is used as a site for recreational development, such as playgrounds, picnic areas, and paths or trails, placing suitable fill over the soil or resurfacing the surface layer can improve trafficability.

The capability subclass is IIs. The woodland ordination symbol is 8S.

20—Lynn Haven fine sand

This very deep, poorly drained soil is in low areas of flatwoods on the southern Coastal Plain. Slopes range from 0 to 2 percent. Individual areas are irregular in shape and range from 5 to 200 acres in size.

Typically, the surface layer is very dark grayish brown fine sand about 14 inches thick. The subsurface layer is grayish brown fine sand to a depth of 25 inches. The upper subsoil is fine sand to a depth of 48 inches. The first 15 inches of the upper subsoil is black, the lower 8 inches is dark brown. Below this is pale brown sand to a depth of 61 inches. The lower subsoil is dark brown sand to a depth of 80 inches or more.

Lynn Haven and similar soils make up 95 to 100 percent of the map unit in 95 percent of the areas mapped as Lynn Haven fine sand. Included in mapping are very poorly drained Rutlege and Pickney soils in depressions.

The seasonal high water table is at the surface to a depth of 6 inches from February through September. Available water capacity is low. Permeability is moderately rapid.

This soil is in the North Florida Flatwoods ecological community (USDA, 1989). In most areas the natural vegetation includes slash pine and bay trees and an understory of wax-myrtle, black titi, gallberry, scattered saw palmetto, and fetterbush.

Most areas of this soil are used for the commercial production of pine.

This soil is poorly suited to most cultivated crops. Wetness is a management concern. If a water-control system and soil improving measures are used, this soil is suited to a number of crops. A water-control system helps to remove excess water in wet seasons and provides surface irrigation in dry seasons. Seedbed preparation can include bedding of rows. A soil fertility management system can increase yields.

This soil is suited to pasture and hay. Drainage helps remove excess water during wet periods. Management of fertility and proper selection of adapted grasses and legumes help to ensure optimum yields. Proper stocking rates, pasture rotation, and restricted grazing during wet periods help to keep the pasture and soil in good condition.

This soil has moderate potential productivity for slash pine and loblolly pine. The main management concerns are a moderate equipment limitation, moderate seedling mortality, and severe plant competition. Plant competition can be controlled by herbicides and prescribed burning. Using special equipment, such as equipment that has large rubber tires or crawler machinery, and harvesting during dry periods minimize the root damage caused by thinning operations and reduce the extent of compaction. Soil compaction restricts water infiltration, aeration, and root growth. Logging systems that leave residue on the site help to maintain the content of organic matter.

This soil is not suited to urban or recreational development. Wetness is a severe limitation.

The capability subclass is IVw. The woodland ordination symbol is 11W.

21—Leefield loamy fine sand

This very deep, somewhat poorly drained soil is on low uplands and on narrow ridges in areas of flatwoods on the southern Coastal Plain. Slopes range from 0 to 2 percent. Individual areas are elongated or irregular in shape and range from 5 to 50 acres in size.

Typically, the surface layer is very dark gray loamy fine sand about 9 inches thick. The upper part of the subsurface layer, to a depth of 20 inches, is light yellowish brown loamy fine sand. The lower part, to a depth of 28 inches, is pale brown loamy fine sand. The upper part of the subsoil, to a depth of 51 inches, is fine sandy loam that is reticulately mottled in shades of gray, yellow, red, and brown. The lower part, to a depth of 80 inches or more, is grayish brown sandy clay loam.

Leefield and similar soils make up 80 to 95 percent of the map unit in 90 percent of the areas mapped as Leefield loamy fine sand. Included in mapping are Albany, Pelham, and Stilson soils. The somewhat poorly drained Albany soils are in landscape positions

similar to those of the Leefield soil. The poorly drained Pelham soils are in slight depressions. The moderately well drained Stilson soils are on the higher ridges and knolls. Also included in various landscape positions are soils that have a loamy subsoil at various depths and that have cobble- to boulder-sized fragments of hardened ironstone in the subsurface layer and subsoil.

The seasonal high water table is at a depth of 18 to 30 inches from December through March. Available water capacity is low. Permeability is moderately slow.

This soil is in the Mixed Hardwood-Pine ecological community (USDA, 1989). In most areas the natural vegetation includes slash pine, longleaf pine, live oak, laurel oak, dogwood, and sweetgum and an understory of saw palmetto, greenbrier, and wiregrass.

Most areas of this soil are used for the commercial production of pine.

This soil is suited to most cultivated crops. The main management concerns are periodic wetness and seasonal droughtiness. A soil fertility management system and a well designed irrigation system can increase yields. Returning all crop residue to the soil and using a cropping system that includes grasses, legumes, or a grass-legume mixture help maintain fertility and tilth.

This soil is suited to pasture and hay. Deep-rooted plants, such as improved bermudagrass and bahiagrass, are more drought tolerant if properly fertilized and limed. Overgrazing on this soil quickly reduces the extent of the plant cover and promotes the growth of undesirable species. Proper stocking rates, pasture rotation, and controlled grazing help to keep the soil and pasture in good condition.

This soil has high potential productivity for loblolly pine and slash pine. The main management concerns are a moderate equipment limitation, moderate seedling mortality, and moderate plant competition. Plant competition can be controlled by herbicides and prescribed burning. The content of organic matter in the surface layer commonly is very low. Logging systems that leave residue on the site can improve fertility.

This soil is poorly suited to urban development. Wetness and seasonal droughtiness are management concerns. Septic tank absorption fields can be mounded to maintain the system above the seasonal high water table. Placement of suitable fill material can elevate building sites.

This soil is suited to local roads and streets. Drainage and placement of suitable fill for elevating roadbeds can help to overcome the wetness affecting road construction.

This soil is also poorly suited to small commercial buildings because of the wetness. Placement of suitable fill material can elevate building sites.

If this soil is used as a site for recreational development, such as playgrounds, picnic areas, and paths or trails, placing suitable topsoil over the soil or resurfacing the sandy areas can minimize erosion and improve trafficability.

The capability subclass is IIw. The woodland ordination symbol is 8W.

22—Leon fine sand

This very deep, poorly drained soil is in areas of flatwoods on the southern Coastal Plain. Slopes range from 0 to 2 percent. Individual areas are irregular in shape and range from 5 to 300 acres in size.

Typically, the surface layer is dark gray fine sand about 4 inches thick. The subsurface layer is light gray fine sand to a depth of 21 inches. The upper part of the subsoil, to a depth of 29 inches, is very dark brown fine sand. The lower part, to a depth of 35 inches, is very pale brown fine sand. The upper part of the underlying material, to a depth of 55 inches, is light gray fine sand. The lower part, to a depth of 80 inches or more, is white fine sand.

Leon and similar soils make up 95 to 100 percent of the map unit in 95 percent of the areas mapped as Leon fine sand. Included in mapping are Sapelo and Mandarin soils. The poorly drained Sapelo soils are in landscape positions similar to those of the Leon soil. The somewhat poorly drained Mandarin soils are on low knolls and narrow ridges in the areas of flatwoods.

The seasonal high water table is at a depth of 6 to 18 inches from March through September. Available water capacity is low. Permeability is moderately slow.

This soil is in the North Florida Flatwoods ecological community (USDA, 1989). In most areas the natural vegetation includes slash pine and longleaf pine and an understory of saw palmetto, wax-myrtle, gallberry, wiregrass, and fetterbush.

Most areas of this soil are used for the commercial production of pine.

This soil is poorly suited to most cultivated crops. Wetness and low fertility are management concerns. A water-control system helps to remove excess water in wet seasons and provides surface irrigation in dry seasons. Row crops can be rotated with close-growing, soil improving crops. Crop residue management and soil improving crops help maintain the content of organic matter. Seedbed preparation can include bedding of rows. A soil fertility management system can increase yields.

This soil is suited to pasture and hay. Drainage helps to remove excess water during wet periods.

Management of fertility and proper selection of adapted grasses and legumes help to ensure optimum yields. Proper stocking rates, pasture rotation, and restricted grazing during wet periods help to keep the pasture and soil in good condition.

This soil has moderate potential productivity for slash pine. The main management concerns are a moderate equipment limitation, moderate seedling mortality, and moderate plant competition. Plant competition can be controlled by herbicides and prescribed burning. Using special equipment, such as equipment that has large rubber tires or crawler machinery, and harvesting during dry periods minimize the root damage caused by thinning operations and reduce the extent of compaction. Soil compaction restricts water infiltration, aeration, and root growth. Logging systems that leave residue on the site help to maintain the content of organic matter.

This soil is poorly suited to urban development. Wetness is a management concern. Septic tank absorption fields can be mounded to maintain the system above the seasonal high water table. Placement of suitable fill material can elevate building sites.

If this soil is used as a site for recreational development, such as playgrounds, picnic areas, and paths or trails, placing suitable topsoil over the soil or resurfacing the sandy areas can minimize erosion and improve trafficability.

The capability subclass is IVw. The woodland ordination symbol is 10W.

23—Maurepas muck, frequently flooded

This very deep, very poorly drained soil is on flood plains consisting of slightly brackish swamps and marshes. Slopes are 0 to 1 percent. Individual areas are elongated or irregular in shape and range from 5 to several hundred acres in size. This soil is flooded at least several times each month by high tides. The elevation and frequency of flooding generally are greater in the areas closer to the coast.

Typically, the surface layer is very dark brown muck about 3 inches thick. The subsurface layer is black muck to a depth of 80 inches or more.

Maurepas and similar soils make up 80 to 100 percent of the map unit in 95 percent of the areas mapped as Maurepas muck, frequently flooded. Included in mapping are very poorly drained Bayvi and Pickney soils on slight rises.

The seasonal high water table is 12 inches above the surface to a depth of 6 inches year around. The depth to the water table fluctuates slightly because of the tide. This soil is flooded by high tides at least several times each month. Available water capacity is very high. Permeability is rapid throughout.

This soil is in the Salt Marsh ecological community (USDA, 1989). In most areas the natural vegetation includes sawgrass, big cordgrass, and black needlerush. In a few small areas, it includes scattered cypress, bay, and gum trees. Most areas still support the natural vegetation. Areas of this soil provide excellent habitat for wading birds and other wetland wildlife.

This soil is not suited to cultivated crops, pasture, hay, woodland, or urban or recreational development. The flooding, ponding, and low bearing strength are severe limitations.

The capability subclass is VIIIw. A woodland ordination symbol has not been assigned.

24—Mandarin fine sand

This very deep, somewhat poorly drained soil is on low ridges and knolls in areas of flatwoods on the southern Coastal Plain. Slopes range from 0 to 2 percent. Individual areas are narrow and elongated in shape and range from 5 to 100 acres in size.

Typically, the surface layer is very dark gray fine sand about 7 inches thick. The subsurface layer is light brownish gray fine sand to a depth of 13 inches. The upper part of the subsoil, to a depth of 17 inches, is dark brown fine sand. The lower part, to a depth of 30 inches, is brown fine sand. The underlying material is white fine sand to a depth of 80 inches or more.

Mandarin and similar soils make up 80 to 100 percent of the map unit in 90 percent of the areas mapped as Mandarin fine sand. Included in mapping are moderately well drained Ortega and Resota soils on knolls and ridges. Also included on low flats are poorly drained soils that have a weakly developed, stained subsoil.

The seasonal high water table is at a depth of 18 to 42 inches from June through December. Available water capacity is low. Permeability is moderate.

This soil is dominantly in the North Florida Flatwoods ecological community (USDA, 1989). In most areas the natural vegetation includes slash pine, longleaf pine, and turkey oak and an understory of wiregrass, pennyroyal, and scattered saw palmetto. Some areas of this soil are in the Sand Pine Scrub ecological plant community. Additional species in this plant community include sand pine, Chapman’s oak, and scrub oak.

Most areas of this soil are used for the commercial production of pine or still support the natural vegetation. Some areas have been used for homesite development.

This soil is not suited to most cultivated crops.

Droughtiness is a severe limitation.

This soil is poorly suited to pasture and hay. Deep-rooted plants, such as improved bermudagrass and bahiagrass, are more drought tolerant if properly fertilized and limed. Overgrazing on this soil quickly reduces the extent of the plant cover and promotes the growth of undesirable species. Proper stocking rates, pasture rotation, and controlled grazing help to keep the soil and pasture in good condition.

This soil has medium potential productivity for slash pine and longleaf pine. The main management concerns are a moderate equipment limitation, severe seedling mortality, and moderate plant competition. Plant competition can be controlled by herbicides and prescribed burning. The content of organic matter in the surface layer commonly is very low. Logging systems that leave residue on the site can improve fertility.

This soil is moderately suited to urban development. Wetness and seasonal droughtiness are management concerns. Septic tank absorption fields can be mounded to maintain the system above the seasonal high water table. Placement of suitable fill material can elevate building sites.

If this soil is used as a site for recreational development, such as playgrounds, picnic areas, and paths or trails, placing suitable topsoil over the soil or resurfacing sandy areas can minimize erosion and improve trafficability.

The capability subclass is VIs. The woodland ordination symbol is 8S.

25—Meggett fine sandy loam, occasionally flooded

This very deep, poorly drained soil is on low terraces, primarily along the Apalachicola River and its tributaries and distributaries. Slopes range from 0 to 2 percent. Individual areas are elongated or irregular in shape and range from 5 to 150 acres in size.

Typically, the surface layer is dark grayish brown fine sandy loam about 5 inches thick. The subsoil extends to a depth of 80 inches. It is dark grayish brown sandy clay loam in the upper part, gray sandy clay loam in the next part, and dark gray and gray clay in the lower part.

Meggett and similar soils make up 95 to 100 percent of the map unit in 95 percent of the areas mapped as Meggett fine sandy loam, occasionally flooded. Included in mapping are Brickyard, Leefield, and Ocilla soils. The very poorly drained Brickyard soils are in slight depressions and in areas that are transitional to low backswamps. The somewhat poorly drained Leefield and Ocilla soils are on low knolls.

The seasonal high water table is at the surface to a depth of 12 inches from November through April. Available water capacity is moderate. Permeability is slow.

This soil is in the Bottomland Hardwoods ecological community (USDA, 1989). In most areas the natural vegetation includes scattered slash pine, bay trees, water oak, sweetgum, cabbage palm, Carolina water ash, and red maple and an understory of scattered saw palmetto, various low, herbaceous plants, and wiregrass.

Most areas of this soil are used for woodland and still support the natural vegetation. A few small areas are used for cropland and pasture.

This soil is not suited to most cultivated crops. Wetness and the occasional flooding are severe limitations.

This soil is suited to pasture and hay. Drainage helps to remove excess water during wet periods. Management of fertility and proper selection of adapted grasses and legumes help to ensure optimum yields. Proper stocking rates, pasture rotation, and restricted grazing during wet periods help to keep the pasture and soil in good condition.

This soil has high potential productivity for slash pine and loblolly pine. The main management concerns are a severe equipment limitation, severe seedling mortality, and severe plant competition. Site preparation, such as harrowing and bedding, reduces the seedling mortality rate and increases early growth. Using special equipment, such as equipment that has large rubber tires or crawler machinery, and harvesting during dry periods minimize the root damage caused by thinning operations and reduce the extent of compaction. Soil compaction reduces water infiltration, aeration, and root growth.

This soil is not suited to urban development. The flooding and wetness are severe limitations.

If this soil is used as a site for recreational development, such as playgrounds, picnic areas, and paths or trails, placing suitable topsoil over the soil or resurfacing the sandy areas can minimize erosion and improve trafficability.

The capability subclass is VIw. The woodland ordination symbol is 13W.

26—Ocilla loamy fine sand, overwash, occasionally flooded

This very deep, somewhat poorly drained soil is on low river terraces and stream terraces. It consists of overwash material. Slopes range from 0 to 2 percent. Individual areas are elongated or irregular in shape and range from 5 to 100 acres in size.

Typically, the surface layer is very dark grayish

brown loamy fine sand about 5 inches thick. The subsurface layer is yellowish brown loamy fine sand to a depth of 30 inches. The subsoil is light olive brown sandy clay loam to a depth of 64 inches. The underlying material is olive yellow stratified sand and loamy sand to a depth of 80 inches or more.

Ocilla and similar soils make up 75 to 100 percent of the map unit in 80 percent of the areas mapped as Ocilla loamy fine sand, overwash, occasionally flooded. Included in mapping are Albany and Rains soils. The somewhat poorly drained Albany soils are in landscape positions similar to those of the Ocilla soil. The poorly drained Rains soils are in slight depressions.

The seasonal high water table is at a depth of 12 to 30 inches from December through April. Available water capacity is low. Permeability is moderately slow.

This soil is in the Mixed Hardwood-Pine ecological community (USDA, 1989). In most areas the natural vegetation includes slash pine, live oak, laurel oak, dogwood, sweetgum, and cabbage palm and an understory of saw palmetto, greenbrier, and wiregrass.

Most areas of this soil are used for pasture or cropland. Many other areas are used for woodland and still support the natural vegetation.

This soil is moderately suited to most cultivated crops. Wetness and the occasional flooding are management concerns. A soil fertility management system and a well designed irrigation system can increase yields. Returning all crop residue to the soil and using a cropping system that includes grasses, legumes, or a grass-legume mixture help maintain fertility and tilth.

This soil is suited to pasture and hay. Deep-rooted plants, such as improved bermudagrass and bahiagrass, are more drought tolerant if properly fertilized and limed. Overgrazing on this soil quickly reduces the extent of the plant cover and promotes the growth of undesirable species. Proper stocking rates, pasture rotation, and controlled grazing help to keep the soil and pasture in good condition.

This soil has medium potential productivity for loblolly pine and slash pine. The main management concerns are a moderate equipment limitation, moderate seedling mortality, and moderate plant competition. The seedling mortality rate can be higher in years when flooding occurs. Plant competition can be controlled by herbicides and prescribed burning. The content of organic matter in the surface layer commonly is very low. Logging systems that leave residue on the site can improve fertility.

This soil is poorly suited to urban development. Wetness and seasonal droughtiness are management concerns. Septic tank absorption fields can be mounded to maintain the system above the seasonal high water table. Placement of suitable fill material can elevate building sites.

If this soil is used as a site for recreational development, such as playgrounds, picnic areas, and paths or trails, placing suitable topsoil over the soil or resurfacing the sandy areas can minimize erosion and improve trafficability.

The capability subclass is IVw. The woodland ordination symbol is 8W.

27—Pelham loamy fine sand

This very deep, poorly drained soil is in low areas of flatwoods and on low flats on the southern Coastal Plain. Slopes range from 0 to 2 percent. Individual areas are elongated or irregular in shape and range from 5 to 100 acres in size.

Typically, the surface layer is black loamy fine sand about 7 inches thick. The upper part of the subsurface layer, to a depth of 16 inches, is dark gray loamy fine sand. The lower part, to a depth of 31 inches, is grayish brown loamy fine sand. The upper part of the subsoil, to a depth of 52 inches, is gray fine sandy loam. The lower part, to a depth of 80 inches or more, is gray sandy clay loam.

Pelham and similar soils make up 75 to 100 percent of the map unit in 90 percent of the areas mapped as Pelham loamy fine sand. Included in mapping are Plummer, Pantego, and Leefield soils. The poorly drained Plummer soils are in landscape positions similar to those of the Pelham soil. The poorly drained Pantego soils are in slight depressions. The somewhat poorly drained Leefield soils are on low knolls.

The seasonal high water table is at the surface to a depth of 12 inches from January through April. Available water capacity is low. Permeability is moderately slow.

This soil is in the North Florida Flatwoods ecological community (USDA, 1989). In most areas the natural vegetation includes slash pine, water oak, and red maple and an understory of black titi, gallberry, scattered saw palmetto, and wiregrass.

Most areas of this soil are used for the commercial production of pine.

This soil is poorly suited to most cultivated crops. Wetness is a management concern. If a water-control system and soil improving measures are used, this soil is suited to a number of crops. A water-control system helps remove excess water in wet seasons and provides surface irrigation in dry seasons. Seedbed preparation can include bedding of rows. A soil fertility management system can increase yields.

This soil is suited to pasture and hay. Drainage

helps remove excess water during wet periods. Management of fertility and proper selection of adapted grasses and legumes help ensure optimum yields. Proper stocking rates, pasture rotation, and restricted grazing during wet periods help to keep the pasture and soil in good condition.

This soil has moderate potential productivity for slash pine and loblolly pine. The main management concerns are a severe equipment limitation, severe seedling mortality, and moderate plant competition. Site preparation, such as harrowing and bedding, reduces the seedling mortality rate and increases early growth. Using special equipment, such as equipment that has large rubber tires or crawler machinery, and harvesting during dry periods minimize the root damage caused by thinning operations and reduce the extent compaction. Soil compaction restricts water infiltration, aeration, and root growth.

This soil is poorly suited to urban development. Wetness is a management concern. Septic tank absorption fields can be mounded to maintain the system above the seasonal high water table. Placement of suitable fill material can elevate building sites.

If this soil is used as a site for recreational development, such as playgrounds, picnic areas, and paths or trails, placing suitable topsoil over the soil or resurfacing the sandy areas can minimize erosion and improve trafficability.

The capability subclass is Vw. The woodland ordination symbol is 11W.

28—Plummer fine sand

This very deep, poorly drained soil is in low areas of flatwoods and in broad, slightly depressional areas on flats. Slopes range from 0 to 2 percent. Individual areas are irregular in shape and range from 15 to 500 acres in size.

Typically, the surface layer is very dark gray fine sand about 10 inches thick. The upper part of the subsurface layer, to a depth of 15 inches, is gray fine sand. The next part, to a depth of 28 inches, is light gray and dark gray fine sand. The lower part, to a depth of 42 inches, is gray loamy fine sand. The upper part of the subsoil, to a depth of 60 inches, is grayish brown fine sandy loam. The next part, to a depth of 72 inches, is gray and light brownish gray fine sandy loam. The lower part, to a depth of 80 inches or more, is light gray fine sandy loam.

Plummer and similar soils make up 75 to 100 percent of the map unit in 80 percent of the areas mapped as Plummer fine sand. Included in mapping are Albany, Pelham, Leefield, and Surrency soils. The somewhat poorly drained Albany and Leefield soils are on low knolls. Pelham soils are in landscape positions similar to those of the Plummer soil but have thinner surface and subsurface layers. The very poorly drained Surrency soils are in the slightly lower depressions and have a dark surface layer.

The seasonal high water table is at the surface to a depth of 12 inches from December through July. Available water capacity is low. Permeability is moderately slow.

This soil is in the North Florida Flatwoods ecological community (USDA, 1989). In most areas the natural vegetation includes slash pine, a few widely scattered baldcypress, and sweetbay and an understory of scattered saw palmetto, gallberry, wax-myrtle, pitcher plants, black titi, and fetterbush.

Most areas of this soil are used for the commercial production of pine.

This soil is poorly suited to most cultivated crops. Wetness is a management concern. If a water-control system and soil improving measures are used, this soil is suited to a number of crops. A water-control system helps remove excess water in wet seasons and provides surface irrigation in dry seasons. Seedbed preparation can include bedding of rows. A soil fertility management system can increase yields.

This soil is suited to pasture and hay. Drainage helps to remove excess water during wet periods. Management of fertility and proper selection of adapted grasses and legumes help to ensure optimum yields. Proper stocking rates, pasture rotation, and restricted grazing during wet periods help to keep the pasture and soil in good condition.

This soil has moderate potential productivity for loblolly pine and slash pine. The main management concerns are a severe equipment limitation, severe seedling mortality, and severe plant competition. Site preparation, such as harrowing and bedding, reduces the seedling mortality rate and increases early growth. Using special equipment, such as equipment that has large rubber tires or crawler machinery, and harvesting during dry periods minimize the root damage caused by thinning operations and reduce the extent compaction. Soil compaction restricts water infiltration, aeration, and root growth.

This soil is poorly suited to urban development. Wetness is a management concern. Septic tank absorption fields can be mounded to maintain the system above the seasonal high water table. Placement of suitable fill material can elevate building sites.

If this soil is used as a site for recreational development, such as playgrounds, picnic areas, and

paths or trails, placing suitable topsoil over the soil or resurfacing the sandy areas can minimize erosion and improve trafficability.

The capability subclass is IVw. The woodland ordination symbol is 11W.

30—Pantego and Bayboro soils, depressional

These very deep, very poorly drained soils are in depressions and along poorly defined streams. Slopes range from 0 to 2 percent. Individual areas are elliptical or irregular in shape and range from 3 to 200 acres in size. This map unit consists of about 50 percent Pantego soil and 30 percent Bayboro soil. These soils were not mapped separately because they have similar use and management requirements.

Typically, the surface layer of the Pantego soil is very dark gray and very dark grayish brown loamy sand about 18 inches thick. The upper part of the subsoil, to a depth of 45 inches, is light gray sandy loam. The lower part, to a depth of 80 inches or more, is light gray sandy clay loam.

Typically, the surface layer of the Bayboro soil is fine sandy loam to a depth of 10 inches. The upper 6 inches is very dark gray, and the lower 4 inches is very dark grayish brown. The subsurface layer is light brownish gray and gray fine sandy loam to a depth of 18 inches. The upper part of the subsoil, to a depth of 44 inches, is gray clay loam. The lower part, to a depth of 80 inches or more, is gray clay.

Pantego, Bayboro, and similar soils make up 75 to 95 percent of the map unit in 90 percent of the areas mapped as Pantego and Bayboro soils, depressional. Included in mapping are poorly drained Bladen and Rains soils on slight rises.

The seasonal high water table is above the surface for about 6 to 9 months in most years. Available water capacity is moderate. Permeability is moderately slow in the Pantego soil and slow in the Bayboro soil.

These soils are in the Swamp Hardwoods ecological community (USDA, 1989). In most areas the natural vegetation includes blackgum, cypress, sweetbay, swamp tupelo, black titi, swamp cyrilla, sawgrass, and scattered slash pine. The understory consists mostly of titi, St. Johnswort, and pitcher plants. Cypress is a more dominant component of the vegetation in the northern part of the county. Most areas of this unit still support the natural vegetation. Pine trees have been planted in a few areas that have a water-control system and bedding. Areas of these soils provide cover for deer and excellent habitat for wading birds and other wetland wildlife.

These soils are not suited to cultivated crops, woodland, pasture, hay, or urban or recreational development. Ponding and wetness are severe limitations.

The capability subclass is VIIw in areas of the Pantego soil and VIw in areas of the Bayboro soil. The woodland ordination symbol is 2W in areas of the Pantego soil and 8W in areas of the Bayboro soil.

31—Pickney-Pamlico complex, depressional

These very deep, very poorly drained soils are in depressions. Slopes range from 0 to 2 percent. This map unit consists of about 50 percent Pickney soil and 35 percent Pamlico soil. Individual areas of these soils are so intermingled on the landscape that it was impractical to separate them at the scale selected for mapping. Mapped areas are irregular in shape and range from 10 to 500 acres in size.

Typically, the surface layer of the Pickney soil is black, very dark brown, and very dark grayish brown fine sand about 51 inches thick. The underlying material is grayish brown fine sand to a depth of 80 inches or more.

Typically, the surface layer of Pamlico soil is muck to a depth of 22 inches. The upper 7 inches is brown, and the lower 15 inches is black. The upper part of the underlying material, to a depth of 28 inches, is very dark grayish brown fine sand. The next part, to a depth of 69 inches, is very dark brown fine sand. The lower part, to a depth of 80 inches or more, is dark grayish brown fine sand.

Pickney, Pamlico, and similar soils make up 85 to 100 percent of the map unit in 95 percent of the areas mapped as Pickney-Pamlico complex, depressional. Included in mapping are poorly drained Lynn Haven and Scranton soils on slight rises, commonly near the edges of the mapped areas.

The seasonal high water table is above the surface for about 6 to 9 months in most years. Available water capacity is very high in the Pamlico soil and low in the Pickney soil. Permeability is moderate in the Pamlico soil and rapid in the Pickney soil.

These soils are in the Shrub Bogs-Bay Swamp ecological community (USDA, 1989). In most areas the natural vegetation includes blackgum, cypress, sweetbay, swamp cyrilla, black titi, and scattered slash pine. Most areas still support the natural vegetation. Areas of these soils provide cover for deer and excellent habitat for wading birds and other wetland wildlife.

These soils are not suited to cultivated crops, woodland, pasture, hay, or urban or recreational development. Ponding, wetness, and low bearing strength are severe limitations.

The capability subclass is VIIw. The woodland ordination symbol is 7W in areas of the Pickney soil and 4W in areas of the Pamlico soil.

32—Rains fine sandy loam

This very deep, poorly drained soil is on low flats. Slopes range from 0 to 2 percent. Individual areas are elongated or irregular in shape and range from 5 to 400 acres in size.

Typically, the surface layer is very dark grayish brown fine sandy loam about 9 inches thick. The subsurface layer is light gray fine sandy loam to a depth of 21 inches. The upper part of the subsoil, to a depth of 60 inches, is gray fine sandy loam. The lower part, to a depth of 80 inches or more, is gray and dark gray sandy clay loam.

Rains and similar soils make up 75 to 100 percent of the map unit in 95 percent of the areas mapped as Rains fine sandy loam. Included in mapping are Pantego, Plummer, and Surrency soils. The very poorly drained Pantego soils are in slight depressions. The very poorly drained Surrency soils are in depressions. The poorly drained Plummer soils are in landscape positions similar to those of the Rains soil.

The seasonal high water table is at the surface to a depth of 12 inches from November through April. Available water capacity is moderate. Permeability is also moderate.

This soil is in the Pitcher Plant Bogs ecological community (USDA, 1989). In most areas the natural vegetation includes slash pine, sweetbay, water oak, and red maple and an understory of wiregrass, trumpets, red pitcher plants, and scattered black titi, St. Johnswort, and saw palmetto.

Most areas of this soil are used for the commercial production of pine or still support the natural vegetation.

This soil is poorly suited to most cultivated crops. Wetness is a management concern. If a water-control system and soil improving measures are used, this soil is suited to a number of crops. Where suitable outlets are available, a water-control system can help remove excess water in wet seasons. Row crops can be rotated with close-growing, soil improving crops. Crop residue management and soil improving crops can help to maintain the content of organic matter and tilth. Seedbed preparation can include bedding of rows. A soil fertility management system can increase yields.

This soil is suited to pasture and hay. Drainage helps to remove excess water during wet periods. Management of fertility and proper selection of adapted grasses and legumes help to ensure optimum yields. Proper stocking rates, pasture rotation, and restricted grazing during wet periods help to keep the pasture and soil in good condition.

This soil has high potential productivity for loblolly pine. The main management concerns are a moderate equipment limitation, moderate seedling mortality, a severe hazard of windthrow, and severe plant competition. Site preparation, such as harrowing and bedding, reduces the seedling mortality rate and increases early growth. Using special equipment, such as equipment that has large rubber tires or crawler machinery, and harvesting during dry periods minimize the root damage caused by thinning operations and reduce the extent of compaction. Soil compaction restricts water infiltration, aeration, and root growth.

This soil is poorly suited to urban development. Wetness is a management concern. Septic tank absorption fields can be mounded to maintain the system above the seasonal high water table. Placement of suitable fill material can elevate building sites.

If this soil is used as a site for recreational development, such as playgrounds, picnic areas, and paths or trails, placing suitable topsoil over the soil or resurfacing the sandy areas can minimize erosion and improve trafficability.

The capability subclass is IIIw. The woodland ordination symbol is 10W.

33—Resota fine sand, 0 to 5 percent slopes

This very deep, moderately well drained soil is on coastal ridges and remnant dunes. Individual areas generally are elongated in shape and range from 3 to 150 acres in size.

Typically, the surface layer is light gray fine sand about 5 inches thick. The subsurface layer is white fine sand to a depth of 15 inches. The upper part of the subsoil, to a depth of 19 inches, is strong brown fine sand that has discontinuous dark brown bands and nodules. The lower part, to a depth of 40 inches, is light yellowish brown fine sand. The underlying material is white fine sand to a depth of 80 inches or more.

Resota and similar soils make up 75 to 100 percent of the map unit in 90 percent of the areas mapped as Resota fine sand, 0 to 5 percent slopes. Included in mapping are Corolla, Leon, Mandarin, and Ridgewood soils. The somewhat poorly drained and moderately well drained Corolla soils are in slight, coastward swales and on low ridges. The poorly drained Leon and somewhat poorly drained Mandarin and Ridgewood soils are in slight swales, on side slopes, and on the lower ridges.

The seasonal high water table is at a depth of 42 to 60 inches from December through April. Available water capacity is very low. Permeability is very rapid throughout.

This soil is dominantly in the Longleaf Pine-Turkey Oak Hills ecological community (USDA, 1989). In most areas the natural vegetation includes longleaf pine, turkey oak, sand pine, and live oak and an understory of wiregrass, rosemary, and scattered saw palmetto. Some areas near the coast are in the Sand Pine Scrub ecological plant community, which is dominated by sand pine and sand live oak. Most areas of this soil still support the natural vegetation.

Some areas of this soil have been used for homesite development.

This soil is not suited to most cultivated crops. Droughtiness is a severe limitation.

This soil is poorly suited to pasture and hay. The amount of moisture this soil can store and make available to grasses and legumes is limited. Deep-rooted plants, such as improved bermudagrass and bahiagrass, are more drought tolerant if properly fertilized and limed. Overgrazing on this soil quickly reduces the extent of the plant cover and promotes the growth of undesirable species. Proper stocking rates, pasture rotation, and controlled grazing help to keep the soil and pasture in good condition.

This soil has low to medium potential productivity for slash pine and longleaf pine. The main management concerns are a moderate equipment limitation, severe seedling mortality, and moderate plant competition. Using special nursery stock that is larger than usual or that is containerized can reduce the seedling mortality rate. Logging systems that leave residue on the site help to maintain the content of organic matter in the soil.

This soil is well suited to homesite development. Because of the rapid permeability, however, careful selection of onsite waste disposal areas is needed to prevent contamination of shallow ground water. This management concern should preclude the practice of clustering homes close together or locating the absorption field adjacent to any body of water. Mulching, fertilizing, and irrigating help establish lawn grasses and other small-seeded plants.

This soil is well suited to local roads and streets and to small commercial buildings. This droughty soil is subject to wind erosion if the natural vegetation is removed. Limiting the removal of the natural vegetation and revegetating using fertilizer, irrigation, and drought-adapted plants help to control wind erosion.

If this soil is used as a site for recreational development, such as playgrounds, picnic areas, and paths or trails, placing suitable topsoil over the soil or resurfacing the sandy areas can minimize erosion and improve trafficability.

The capability subclass is VIs. The woodland ordination symbol is 8S.

34—Pickney and Rutlege soils, depressional

These very deep, very poorly drained soils are in broad, shallow depressions. Individual areas are elongated or irregular in shape and range from 25 to 500 acres in size. This map unit consists of about 40 percent Pickney soil and 35 percent Rutlege soil. These soils were not mapped separately because they have similar use and management requirements.

Typically, the surface layer of the Pickney soil is black, very dark brown, and very dark grayish brown fine sand about 51 inches thick. The underlying material is grayish brown fine sand to a depth of 80 inches or more.

Typically, the surface layer of the Rutlege soil is black fine sand about 19 inches thick. The upper part of the underlying material, to a depth of 39 inches, is light brownish gray fine sand. The next part, to a depth of 65 inches, is grayish brown fine sand. The lower part, to a depth of the 80 inches or more, is dark gray fine sand.

Pickney, Rutlege, and similar soils make up 90 to 100 percent of the map unit in 95 percent of the areas mapped as Pickney and Rutlege soils, depressional. Included in mapping are poorly drained Lynn Haven, Pottsburg, and Scranton soils on slight knolls.

The seasonal high water table is above the surface from November through May. Available water capacity is low. Permeability is rapid throughout.

These soils are in the Shrub Bogs-Bay Swamp ecological community (USDA, 1989). In most areas the natural vegetation includes blackgum, cypress, sweetbay, swamp cyrilla, black titi, and scattered slash pine. Most areas still support the natural vegetation. A few areas that have a water-control system and bedding have been planted to pines or are used for pasture and hay. Areas of these soils provide cover for deer and excellent habitat for wading birds and other wetland wildlife.

These soils are not suited to cultivated crops, woodland, pasture, hay, or urban or recreational development. Ponding, wetness, and low bearing strength are severe limitations.

The capability subclass is VIw in areas of the Pickney soil and VIIw in areas of the Rutlege soil. The woodland ordination symbol is 7W in areas of the Pickney soil and 2W in areas of the Rutlege soil.

35—Stilson loamy fine sand, 0 to 5 percent slopes

This very deep, moderately well drained soil is on uplands. Individual areas are elongated or irregular in shape and range from 3 to 50 acres in size.

Typically, the surface layer is dark grayish brown loamy fine sand about 6 inches thick. The subsurface layer is yellowish brown loamy fine sand to a depth of 25 inches. The upper part of the subsoil, to a depth of 32 inches, is yellowish brown fine sandy loam. The next part, to a depth of 61 inches, is light yellowish brown fine sandy loam. The lower part, to a depth of 80 inches or more, is sandy clay loam that is reticulately mottled in shades of gray, red, and brown.

Stilson and similar soils make up 75 to 100 percent of the map unit in 95 percent of the areas mapped as Stilson loamy fine sand, 0 to 5 percent slopes. Included in mapping are Blanton, Clarendon, Dothan, and Leefield soils. The moderately well drained Blanton and Clarendon soils and the well drained Dothan soils are on ridges and knolls. The somewhat poorly drained Leefield soils are in slight depressions.

The seasonal high water table is at a depth of 30 to 36 inches from December through April. The water table may be perched for short periods after heavy rains during any time of the year. Available water capacity is low. Permeability is moderate.

This soil is in the Mixed Hardwood-Pine ecological community (USDA, 1989). In most areas the natural vegetation includes live oak and longleaf pine and an understory of wiregrass, ferns, huckleberry, and scattered saw palmetto.

Most areas of this soil are used for the commercial production of pine.

This soil is moderately suited to most cultivated crops. Droughtiness is a management concern. Irrigation can help to overcome the droughtiness during extended dry periods. A soil fertility management system can increase yields. Returning all crop residue to the soil and using a cropping system that includes grasses, legumes, or a grass-legume mixture help maintain fertility and tilth.

This soil is suited to pasture and hay. Proper stocking rates, pasture rotation, and controlled grazing help to keep the soil and pasture in good condition.

This soil has high potential productivity for slash pine, loblolly pine, and longleaf pine. The main management concern is a moderate equipment limitation. Using special equipment, such as equipment that has large rubber tires or crawler machinery, and harvesting during dry periods minimize the root damage caused by thinning operations and reduce the extent of compaction. The content of organic matter in the surface layer commonly is very low. Logging systems that leave residue on the site can improve fertility.

This soil is well suited to homesite development. Septic tank absorption fields can be mounded to maintain the system above the seasonal high water table. Mulching, fertilizing, and irrigating help establish lawn grasses and other small-seeded plants.

This soil is well suited to small commercial buildings and to local roads and streets.

If this soil is used as a site for recreational development, such as playgrounds, picnic areas, and paths or trails, placing suitable topsoil over the soil or resurfacing the sandy areas can minimize erosion and improve trafficability.

The capability subclass is IIs. The woodland ordination symbol is 9W.

36—Sapelo sand

This very deep, poorly drained soil is in areas of flatwoods on the southern Coastal Plain. Slopes range from 0 to 2 percent. Individual areas are elongated or irregular in shape and range from 5 to 100 acres in size.

Typically, the surface layer is very dark gray sand about 6 inches thick. The subsurface layer is grayish brown sand to a depth of 12 inches. The upper part of the subsoil extends to a depth of 17 inches. The first 3 inches of the upper part of the subsoil is very dark grayish brown loamy sand, and the lower 2 inches is dark brown sand. Below this is pale brown sand to a depth of 34 inches. Next is light gray sand to a depth of 47 inches. The lower part of the subsoil is fine sandy loam to a depth of 80 inches. It is light brownish gray to a depth of 66 inches and gray below this depth.

Sapelo and similar soils make up 80 to 100 percent of the map unit in 95 percent of the areas mapped as Sapelo sand. Included in mapping are poorly drained Pelham and Plummer soils in landscape positions similar to those of the Sapelo soil and in slightly depressional areas.

The seasonal high water table is at a depth of 6 to 18 inches from November through April. Available water capacity is low. Permeability is rapid throughout.

This soil is in the North Florida Flatwoods ecological community (USDA, 1989). In most areas the natural vegetation includes slash pine and longleaf pine and an understory of saw palmetto, wax-myrtle, gallberry, wiregrass, running oak, black titi, and fetterbush.

Most areas of this soil are used for the commercial production of pine.

This soil is poorly suited to most cultivated crops. Wetness and low fertility are management concerns. A water-control system helps remove excess water in

wet seasons and provides surface irrigation in dry seasons. Row crops can be rotated with close-growing, soil improving crops. Crop residue management and soil improving crops can help to maintain the content of organic matter. Seedbed preparation can include bedding of rows. A soil fertility management system can increase yields.

This soil is suited to pasture and hay. Drainage helps to remove excess water during wet periods. Management of fertility and proper selection of adapted grasses and legumes help to ensure optimum yields. Proper stocking rates, pasture rotation, and restricted grazing during wet periods help to keep the pasture and soil in good condition.

This soil has moderate potential productivity for loblolly pine and slash pine . The main management concerns are a moderate equipment limitation and severe plant competition. Using special equipment, such as equipment that has large rubber tires or crawler machinery, and harvesting during dry periods minimize the root damage caused by thinning operations and reduce the extent of soil compaction. Logging systems that leave residue on the site help to maintain the content of organic matter. Plant competition can be controlled by herbicides and prescribed burning.

This soil is poorly suited to urban development. Wetness is a management concern. Septic tank absorption fields can be mounded to maintain the system above the seasonal high water table. Placement of suitable fill material can elevate building sites.

If this soil is used as a site for recreational development, such as playgrounds, picnic areas, and paths or trails, placing suitable topsoil over the soil or resurfacing the sandy areas can minimize erosion and improve trafficability.

The capability subclass is IIIw. The woodland ordination symbol is 11W.

37—Scranton fine sand

This very deep, poorly drained soil is in areas of flatwoods on the southern Coastal Plain. Slopes range from 0 to 2 percent. Individual areas are elongated or irregular in shape and range from 5 to 300 acres in size.

Typically, the surface layer is very dark brown fine sand about 9 inches thick. The underlying material is also fine sand. In sequence downward, it is dark gray and brown to a depth of 18 inches, grayish brown and dark gray to a depth of 40 inches, light brownish gray to a depth of 50 inches, and gray to a depth of 80 inches or more.

Scranton and similar soils make up 75 to 100 percent of the map unit in 80 percent of the areas mapped as Scranton fine sand. Included in mapping are Leon, Ridgewood, and Rutlege soils. The poorly drained Leon soils are in landscape positions similar to those of Scranton soil. The somewhat poorly drained Ridgewood soils are on low knolls and narrow ridges in areas of flatwoods. The very poorly drained Rutlege soils are in depressions.

The seasonal high water table is at the surface to a depth of 6 to 18 inches from November through April. Available water capacity is low. Permeability is rapid throughout.

This soil is in the North Florida Flatwoods ecological community (USDA, 1989). In most areas the natural vegetation includes slash pine and longleaf pine and an understory of saw palmetto, wax-myrtle, gallberry, wiregrass, runner oak, swamp cyrilla, and fetterbush.

Most areas of this soil are used for the commercial production of pine.

This soil is poorly suited to most cultivated crops. Wetness and low fertility are management concerns. A water-control system helps remove excess water in wet seasons and provides surface irrigation in dry seasons. Row crops can be rotated with close-growing, soil improving crops. Crop residue management and soil improving crops can help to maintain the content of organic matter. Seedbed preparation can include bedding of rows. A soil fertility management system can increase yields.

This soil is suited to pasture and hay. Drainage helps to remove excess water during wet periods. Management of fertility and proper selection of adapted grasses and legumes help to ensure optimum yields. Proper stocking rates, pasture rotation, and restricted grazing during wet periods help to keep the pasture and soil in good condition.

This soil has moderate potential productivity for loblolly pine and slash pine. The main management concerns are a moderate equipment limitation and severe plant competition. Using special equipment, such as equipment that has large rubber tires or crawler machinery, and harvesting during dry periods minimize the root damage caused by thinning operations and reduce soil compaction. Logging systems that leave residue on the site help to maintain the content of organic matter in the soil. Plant competition can be controlled by herbicides and prescribed burning.

This soil is poorly suited to urban development. Wetness is a management concern. Septic tank absorption fields can be mounded to maintain the system above the seasonal high water table. Placement of suitable fill material can elevate building sites.

If this soil is used as a site for recreational development, such as playgrounds, picnic areas, and paths or trails, placing suitable topsoil over the soil or resurfacing the sandy areas can minimize erosion and improve trafficability.

The capability subclass is IIIw. The woodland ordination symbol is 11W.

38—Meadowbrook fine sand, occasionally flooded

This very deep, poorly drained soil is on flood plains along shallow, intermittent streams. Slopes range from 0 to 2 percent. Individual areas are irregular in shape and range from 15 to 500 acres in size.

Typically, the surface layer is very dark grayish brown fine sand about 4 inches thick. The subsurface layer is light gray, dark grayish brown, and grayish brown fine sand to a depth of 61 inches. The subsoil is light gray fine sandy loam to a depth of 80 inches or more.

Meadowbrook and similar soils make up 75 to 100 percent of the map unit in 95 percent of the areas mapped as Meadowbrook fine sand, occasionally flooded. Included in mapping are poorly drained Pelham and Scranton soils in landscape positions similar to those of the Meadowbrook soil and on very slight knolls.

The seasonal high water table is at the surface to a depth of 12 inches from August through March. Slowly moving, shallow water may flood this unit for short periods following heavy rains at any time of the year. Available water capacity is low. Permeability is moderately slow.

This soil is in the Shrub Bogs-Bay Swamp ecological community (USDA, 1989). In most areas the natural vegetation includes slash pine, Atlantic white cedar, scattered cypress, gums, and sweetbay and an understory of wax-myrtle, swamp cyrilla, black titi, and fetterbush. Most areas of this soil still support the natural vegetation.

This soil is poorly suited to most cultivated crops. Wetness and the occasional flooding are management concerns. If a water-control system and soil improving measures are used, this soil is suited to a number of crops. A water-control system helps remove excess water in wet seasons and provides surface irrigation in dry seasons. Seedbed preparation can include bedding of rows. A soil fertility management system can increase yields.

This soil is poorly suited to pasture and hay. Drainage helps to remove excess water during wet periods. Management of fertility and proper selection of adapted grasses and legumes help to ensure optimum yields. Proper stocking rates, pasture rotation, and restricted grazing during wet periods help to keep the pasture and soil in good condition.

This soil has high potential productivity for slash pine and loblolly pine. The main management concerns are a severe equipment limitation, severe seedling mortality, and severe plant competition. Site preparation, such as harrowing and bedding, reduces the seedling mortality rate and increases early growth. Using special equipment, such as equipment that has large rubber tires or crawler machinery, and harvesting during dry periods minimize the root damage caused by thinning operations and reduce the extent of compaction. Soil compaction restricts water infiltration, aeration, and root growth.

This soil is poorly suited to urban development. Wetness and the occasional flooding are management concerns. Septic tank absorption fields can be mounded to maintain the system above the seasonal high water table. Placement of suitable fill material can elevate building sites.

If this soil is used as a site for recreational development, such as playgrounds, picnic areas, and paths or trails, placing suitable topsoil over the soil or resurfacing the sandy areas can minimize erosion and improve trafficability.

The capability subclass is IVw. The woodland ordination symbol is 11W.

39—Surrency mucky fine sand, depressional

This very deep, very poorly drained soil is in shallow depressions and along poorly defined streams and drainageways. Slopes range from 0 to 2 percent. Individual areas are elliptical or irregular in shape and range from 5 to 200 acres in size.

The surface layer is black mucky fine sand about 18 inches thick. The subsurface layer is dark grayish brown loamy fine sand to a depth of 34 inches. The upper part of the subsoil, to a depth of 65 inches, is dark grayish brown sandy loam. The lower part, to a depth of 80 inches or more, is gray sandy loam.

Surrency and similar soils make up 75 to 100 percent of the map unit in 90 percent of the areas mapped as Surrency mucky fine sand, depressional. Included in mapping are poorly drained Pelham and Plummer soils on slight rises.

The seasonal high water table is 12 inches above the surface to a depth of 6 inches year around. Available water capacity is moderate. Permeability is also moderate.

This soil is in the Shrub Bogs-Bay Swamp ecological community (USDA, 1989). In most areas,

the natural vegetation includes blackgum, cypress, sweetbay, swamp tupelo, black titi, swamp cyrilla, sawgrass, and scattered slash pine and the understory consists mostly of scrub-sized titi, St. Johnswort, and pitcher plants. Cypress is a more dominant component of the vegetation in the northern part of the county. Most areas of this map unit still support the natural vegetation. Pine trees have been planted in a few areas that have a water-control system and bedding. Areas of this soil provide cover for deer and excellent habitat for wading birds and other wetland wildlife.

This soil is not suited to cultivated crops, woodland, pasture, hay, or urban or recreational development. Ponding and wetness are severe limitations.

The capability subclass is VIw. The woodland ordination symbol is 10w.

40—Brickyard silty clay, frequently flooded

This very deep, very poorly drained soil is on flood plains in backswamps along the Apalachicola River and its distributaries. Slopes are 0 to 1 percent. Individual areas are elongated in shape and range from 25 to several thousand acres in size.

Typically, the surface layer is dark grayish brown and brown silty clay about 4 inches thick. The upper part of the subsoil, to a depth of 10 inches, is grayish brown clay. The lower part, to a depth of 22 inches, is light brownish gray clay. The upper part of the underlying material, to a depth of 35 inches, is grayish brown clay. The lower part, to a depth of 80 inches or more, is gray clay.

Brickyard and similar soils make up 75 to 90 percent of the map unit in 80 percent of the areas mapped as Brickyard silty clay, frequently flooded. Included in mapping are Bladen, Mantachie, and Wahee soils. The poorly drained Bladen soils are on toeslopes of terrace scarps. The somewhat poorly drained Mantachie and Wahee soils are on natural levees. Also included on landscapes that have been altered by human activity are high areas of sandy dredge spoil.

The seasonal high water table is at the surface to a depth of 6 inches from December through August. The depth to the water table fluctuates slightly because of the daily tides. The influence of the tide increases with proximity to estuarine marshes near the mouth of the river. This soil is flooded in the spring of most years for 1 month or more. Available water capacity is moderate. Permeability is very slow throughout.

This soil is dominantly in the Swamp Hardwoods ecological community (USDA, 1989). In most areas the natural vegetation includes water ogeechee, swamp tupelo, Carolina water ash, cabbage palm, and cypress. Most areas still support the natural vegetation. Areas of this soil provide cover for deer and excellent habitat for wading birds and other wetland wildlife.

This soil is not suited to cultivated crops, woodland, pasture, hay, or urban or recreational development. The flooding and low bearing strength are severe limitations (fig. 6).

The capability subclass is VIIw. The woodland ordination symbol is 7W.

41—Brickyard, Chowan, and Kenner soils, frequently flooded

These very deep, very poorly drained soils are on the flood plain along the Apalachicola River and its distributaries. Slopes are 0 to 1 percent. Individual areas are elongated in shape and range from 25 to several thousand acres in size. This map unit consists of about 30 percent Brickyard soil, 25 percent Chowan soil, and 25 percent Kenner soil. Individual areas of these soils were not mapped separately because they have similar use and management requirements.

Typically, the surface layer of the Brickyard soil is very dark grayish brown silt loam about 5 inches thick. The subsoil is dark grayish brown clay to a depth of 34 inches. The upper part of the underlying material, to a depth of 71 inches, is very dark grayish brown silty clay. The lower part, to a depth of 80 inches or more, is dark gray silty clay.

Typically, the surface layer of the Chowan soil is very dark grayish brown silt loam about 8 inches thick. The upper part of the underlying material, to a depth of 17 inches, is dark grayish brown loam. The lower part, to a depth of 38 inches, is gray silty clay loam. Below this, to a depth of 80 inches or more, is a buried layer of very dark grayish brown muck that has stratified layers of loam.

Typically, the surface layer of the Kenner soil is muck to a depth of 38 inches. The upper 10 inches of the surface layer is dark brown, and the lower 28 inches is very dark grayish brown. In sequence downward, the underlying material is dark grayish brown silty clay to a depth of 42 inches, very dark gray muck to a depth of 46 inches, gray silty clay to a depth 65 inches, and very dark gray muck to a depth of 80 inches or more.

Brickyard, Chowan, Kenner, and similar soils make up 95 to 100 percent of the map unit in 95 percent of the areas mapped as Brickyard, Chowan, and Kenner soils, frequently flooded. Included in mapping are

Figure 6.—An area of Brickyard silty clay, frequently flooded. Flooding is a hazard affecting most land uses in areas of this soil.

somewhat poorly drained Mantachie soils in slightly higher positions. Also included on landscapes that have been altered by human activities are high areas of sandy dredge spoil.

The seasonal high water table is 12 inches above the surface to a depth of 6 inches for 6 to 9 months in most years. These soils are flooded in the spring of most years for 1 month or more. The depth to the water table fluctuates slightly because of the tide. The influence of the tide increases with proximity to estuarine marshes near the mouth of the river. Available water capacity ranges from very high to moderate. Permeability is moderately slow in the Chowan soil and very slow in the Brickyard and Kenner soils.

This map unit is in the Swamp Hardwoods ecological community (USDA, 1989). In most areas the natural vegetation includes water ogeechee, swamp tupelo, Carolina water ash, cabbage palm, and cypress. Most areas still support the natural vegetation. Areas of these soils provide cover for deer and excellent habitat for wading birds and other wetland wildlife.

These soils are not suited to cultivated crops, woodland, pasture, hay, or urban or recreational development. The flooding and low bearing strength are severe limitations.

The capability subclass is VIIw. The woodland ordination symbol is 7W in areas of the Brickyard soil and 9W in areas of the Chowan soil. A woodland

ordination symbol has not been assigned for areas of the Kenner soil.

42—Pottsburg fine sand

This very deep, poorly drained soil is in low areas of flatwoods on the southern Coastal Plain. Slopes range from 0 to 2 percent. Individual areas are irregular in shape and range from 5 to 200 acres in size.

Typically, the surface layer is very dark gray fine sand about 6 inches thick. The upper part of the subsurface layer, to a depth of 13 inches, is light brownish gray fine sand. The lower part, to a depth of 53 inches, is light gray fine sand. The upper part of the subsoil, to a depth of 67 inches, is dark brown fine sand. The lower part, to a depth of 80 inches or more, is grayish brown fine sand.

Pottsburg and similar soils make up 80 to 100 percent of the map unit in 95 percent of the areas mapped as Pottsburg fine sand. Included in mapping are very poorly drained Rutlege and Pickney soils in depressions. Also included on low knolls are somewhat poorly drained, sandy soils that have a weakly developed subsoil.

The seasonal high water table is at the surface to a depth of 6 inches from February through September. Available water capacity is low. Permeability is moderate.

This soil is in the North Florida Flatwoods ecological community (USDA, 1989). In most areas the natural vegetation includes slash pine and bay trees and an understory of saw palmetto, wax-myrtle, gallberry, wiregrass, black titi, and fetterbush.

Most areas of this soil are used for the commercial production of pine.

This soil is poorly suited to most cultivated crops. Wetness is a management concern. A water-control system helps remove excess water in wet seasons and provides surface irrigation in dry seasons. Row crops can be rotated with close-growing, soil improving crops. Crop residue management and soil improving crops can help to maintain the content of organic matter. Seedbed preparation can include bedding of rows.

This soil is suited to pasture and hay. Drainage helps to remove excess water during wet periods. Management of fertility and proper selection of adapted grasses and legumes help to ensure optimum yields. Proper stocking rates, pasture rotation, and restricted grazing during wet periods help to keep the pasture and soil in good condition.

This soil has moderate potential productivity for slash pine, loblolly pine, and longleaf pine. The main management concerns are a moderate equipment limitation, moderate seedling mortality, and severe plant competition. Using special equipment, such as equipment that has large rubber tires or crawler machinery, and harvesting during dry periods minimize the root damage caused by thinning operations and reduce the extent of soil compaction. Soil compaction restricts water infiltration, aeration, and root growth. Logging systems that leave residue on the site help to maintain the content of organic matter. Plant competition can be controlled by herbicides and prescribed burning.

This soil is poorly suited to urban development. Wetness and seasonal droughtiness are management concerns. Septic tank absorption fields can be mounded to maintain the system above the seasonal high water table. Placement of suitable fill material can elevate building sites.

If this soil is used as a site for recreational development, such as playgrounds, picnic areas, and paths or trails, placing suitable topsoil over the soil or resurfacing the sandy areas can minimize erosion and improve trafficability.

The capability subclass is IVw. The woodland ordination symbol is 8W.

44—Pamlico-Pickney complex, frequently flooded

These very deep, very poorly drained soils are on flood plains. Slopes are 0 to 1 percent. This map unit consists of about 55 percent Pamlico soil and 40 percent Pickney soil. Individual areas of these soils are so intermingled on the landscape that it was impractical to separate them at the scale selected for mapping. Mapped areas are elongated in shape and range from 10 to several hundred acres in size.

Typically, the surface layer of the Pamlico soil is muck to a depth of 22 inches. The upper 7 inches of the surface layer is very dark grayish brown, and the lower 15 inches is black. The upper part of the underlying material, to a depth of 28 inches, is very dark grayish brown fine sand. The next part, to a depth of 69 inches, is very dark brown fine sand. The lower part, to a depth of 80 inches or more, is dark grayish brown fine sand.

Typically, the surface layer of the Pickney soil is black, very dark brown, and very dark grayish brown fine sand about 51 inches thick. The underlying material is brown fine sand to a depth of 80 inches or more.

Pamlico, Pickney, and similar soils make up 95 to 100 percent of the map unit in 95 percent of the areas mapped as Pamlico-Pickney complex, frequently flooded. Included in mapping are poorly drained Lynn

Haven, Plummer, and Scranton soils on knolls and in areas of flatwoods that are transitional to the mapped areas.

The seasonal high water table is at the surface to 12 inches above the surface throughout the year in areas of the Pamlico soil. It ranges from 12 inches above the surface to 18 inches below the surface from November through July in areas of the Pickney soil. Flooding occurs during times of heavy rainfall. Available water capacity is very high in the Pamlico soil and low in the Pickney soil. Permeability is moderate in the Pamlico soil and rapid in the Pickney soil.

These soils are in the Swamp Hardwoods ecological community (USDA, 1989). In most areas the natural vegetation includes blackgum, cypress, sweetbay, red maple, and scattered slash pine and an understory of ferns and grasses. Most areas still support the natural vegetation. Areas of these soils provide cover for deer and excellent habitat for wading birds and other wetland wildlife.

These soils are not suited to cultivated crops, woodland, pasture, hay, or urban or recreational development. The flooding, ponding, wetness, and low bearing strength are severe limitations.

The capability subclass is VIIw in areas of the Pamlico soil and VIw in areas of the Pickney soil. The woodland ordination symbol is 2W in areas of the Pamlico soil and 7W in areas of the Pickney soil.

45—Croatan-Surrency complex, frequently flooded

These very deep, very poorly drained soils are in backswamps on flood plains. Slopes are 0 to 1 percent. This map unit consists of about 45 percent Croatan soil and 35 percent Surrency soil. Individual areas of these soils are so intermingled on the landscape that it was impractical to separate them at the scale selected for mapping. Mapped areas are elongated in shape and range from 50 to several hundred acres in size.

Typically, the surface layer of the Croatan soil is muck to a depth of 42 inches. The upper 21 inches of the surface layer is dark brown, the next 15 inches is very dark brown, and the lower 6 inches is very dark grayish brown. Below this is very dark grayish brown mucky sandy loam to a depth of 46 inches. The upper part of the underlying material, to a depth of 65 inches, is grayish brown sandy clay loam. The lower part, to a depth of 80 inches or more, is gray clay loam.

Typically, the surface layer of the Surrency soil is black mucky fine sand about 18 inches thick. The subsurface layer is very dark grayish brown loamy fine sand to a depth of 34 inches. The upper part of the subsoil, to a depth of 65 inches, is dark grayish brown sandy loam. The lower part, to a depth of 80 inches or more, is gray sandy loam.

Croatan, Surrency, and similar soils make up 80 to 100 percent of the map unit in 90 percent of the areas mapped as Croatan-Surrency complex, frequently flooded. Included in mapping are poorly drained Pelham and Plummer soils on slight knolls near the edges of the mapped areas.

The seasonal high water table is at the surface to a depth of 12 inches for 6 to 9 months in most years. Flooding occurs during periods of heavy rainfall. Available water capacity is very high in the Croatan soil and moderate in the Surrency soil. Permeability is very slow in the Croatan soil and moderate in the Surrency soil.

These soils are in the Swamp Hardwoods ecological community (USDA, 1989). In most areas the natural vegetation includes blackgum, cypress, sweetbay, red maple, swamp tupelo, and scattered slash pine and an understory of ferns and grasses. Most areas still support the natural vegetation. Areas of these soils provide cover for deer and excellent habitat for wading birds and other wetland wildlife.

These soils are not suited to cultivated crops, woodland, pasture, hay, or urban or recreational development. The flooding, ponding, wetness, and low bearing strength are severe limitations.

The capability subclass is VIIw. The woodland ordination symbol is 2W in areas of the Croatan soil and 10W in areas of the Surrency soil.

46—Corolla-Duckston complex, gently undulating, flooded

These very deep, moderately well drained to poorly drained soils are on low ridges, on flats, and in swales. They are on the coast. The somewhat poorly drained to moderately well drained Corolla soil is on low ridges. The poorly drained Duckston soil is on broad flats. Slopes range from 0 to 2 percent in areas of the Duckston soil and from 0 to 6 percent in areas of the Corolla soil. This map unit consists of about 50 percent Corolla soil, 40 percent poorly drained Duckston soil, and 10 percent very poorly drained Duckston soil. Individual areas of these soils are so narrow that it was impractical to separate them at the scale selected for mapping. Mapped areas are elongated in shape and range from 15 to several hundred acres in size.

Typically, the surface layer of the Corolla soil is very pale brown sand about 4 inches thick. The upper part of the substratum, to a depth of 24 inches, is very pale brown fine sand. Below this, from a depth of 24 to 29 inches, is a buried surface horizon of very dark gray fine sand that has black pockets and streaks. The next

part of the substratum, from a depth of 29 to 45 inches, is white fine sand. This part of the substratum has mottles in shades of brown below a depth of 39 inches. A second buried surface horizon is at a depth of 45 to 52 inches. It is very dark gray fine sand. The lower part of the substratum, to a depth of 80 inches, is light gray and gray sand that has black pockets and streaks.

Typically, the surface layer of the Duckston soil is very dark gray sand about 2 inches thick. The upper part of the substratum is light brownish gray sand to a depth of 7 inches. The lower part to a depth of 80 inches or more is light gray sand containing shell fragments.

Corolla, Duckston, and similar soils make up 95 to 100 percent of the map unit in 95 percent of the areas mapped as Corolla-Duckston complex, 0 to 6 percent slopes, flooded. Included in mapping are Bayvi and Kureb soils. The very poorly drained Bayvi soils are in the tidal marshes. The excessively drained Kureb soils are on high, stable, secondary dunes.

The seasonal high water table is at a depth of 18 to 36 inches from November through May in the Corolla soil. The Duckston soil has a continuous high water table at the surface to a depth of 6 inches throughout most years. The depth to the water table in the Duckston soil fluctuates slightly because of the tide. Flooding on the Duckston soil is likely when heavy rain occurs in combination with high tides or during coastal storms. The Corolla soil is subject to rare flooding during strong coastal storms. Available water capacity is low or very low. Permeability is very rapid throughout.

These soils are in the North Florida Coastal Strand ecological community (USDA, 1989). In most areas of the Corolla soil, the natural vegetation includes live oak, myrtle oak, rosemary, and wax-myrtle. In most areas of the Duckston soil, the natural vegetation includes slash pine, water oak, laurel oak, cabbage palm, gallberry, and marshhay cordgrass. Willow sawgrass, cabbage palm, slash pine, black needlerush, and cattails are in the wettest parts of the map unit. Most areas still support the natural vegetation.

These soils are not suited to cultivated crops, woodland, pasture, hay, or urban development. Wetness, the flooding, and droughtiness are severe limitations.

If these soils are used as a site for recreational development, such as playgrounds, picnic areas, and paths or trails, placing suitable topsoil over the soils or resurfacing the sandy areas can minimize erosion and improve trafficability.

The capability subclass is VIIs in areas of the Corolla soil and VIIw in areas of the Duckston soil. A woodland ordination symbol has not been assigned.

47—Newhan-Corolla complex, rolling

These very deep, excessively drained and somewhat poorly drained soils are on remnant coastal dunes and in swales. Slopes generally are 5 to 15 percent but range from 2 to 20 percent. Individual areas are long and narrow and range from 25 to 250 acres in size. The Newhan soil is in the higher dune positions. The Corolla soil is on low dunes and in high swales between dunes. This map unit consists of about 65 percent Newhan soil and 30 percent Corolla soil. Individual areas of these soils are so narrow and intermingled that it was impractical to separate them at the scale selected for mapping.

Typically, the surface layer of the Newhan soil is gray fine sand about 1 inch thick. The substratum is white fine sand to depth of 80 inches or more.

Typically, the surface layer of the Corolla soil is gray fine sand about 5 inches thick. The underlying material extends to a depth of 80 inches or more. It is light gray fine sand in the upper part, white fine sand in the next part, and light gray fine sand that has coarse white patches in the lower part.

Newhan, Corolla, and similar soils make up 95 to 100 percent of the map unit in 95 percent of the areas mapped as Newhan-Corolla complex, rolling. Included in mapping are poorly drained and very poorly drained Duckston soils in low swales and depressions.

The seasonal high water table is below a depth of 72 inches throughout the year in areas of the Newhan soil. It is at a depth of 18 to 36 inches from November through May in areas of the Corolla soil. Available water capacity is very low. Permeability is very rapid.

These soils are in the Sand Pine Scrub ecological community (USDA, 1989). In most areas the natural vegetation is sparse and includes sand pine, scattered slash pine, sand live oak, Chapman oak, myrtle oak, wax-myrtle, saw palmetto, and seaoats and various woody shrubs, grasses, and herbaceous plants.

Many areas of these soils have been used for homesites, commercial development, or recreational development. Some areas still support the natural vegetation.

These soils are not suited to cultivated crops, pasture, or woodland. The slope, the loose consistency of the surface layer, and droughtiness are severe limitations.

These soils are poorly suited to urban development. Wind erosion, the slope, the very rapid permeability,

and shifting sands are management concerns. The Corolla soil may be flooded during extreme coastal storms. The slope can be reduced by cutting and filling. Because of the risk of ground water pollution, septic systems should be installed only for low-density use and should not be located close to any body of water. Mulching, fertilizing, and irrigating help establish landscape plants and lawn grasses. Care should be taken to protect the natural vegetation because it is adapted to these soils and helps to control erosion. Artificial or adapted vegetative barriers also help to control wind erosion.

If these soils are used as a site for recreational development, such as playgrounds, picnic areas, and paths or trails, placing suitable topsoil over the soils or resurfacing the sandy areas can minimize erosion and improve trafficability.

The capability subclass is VIIIs in areas of the Newhan soil and VIIe in areas of the Corolla soil. A woodland ordination symbol has not been assigned.

48—Kureb-Corolla complex, rolling

These very deep, excessively drained to somewhat poorly drained soils are on remnant coastal dunes and in swales. Slopes generally are 5 to 15 percent but range from 2 to 20 percent. Individual areas are elongated and range from 25 to 250 acres in size. The Kureb soil is on high dunes. The Corolla soil is on low dunes and in high swales between dunes. This map unit consists of about 65 percent Kureb soil and 30 percent Corolla soil. Individual areas of these soils are so narrow and intermingled that it was impractical to separate them at the scale selected for mapping.

Typically, the surface layer of the Kureb soil is gray fine sand about 2 inches thick. The subsurface layer is white fine sand to a depth of 12 inches. It tongues into the subsoil, which is light yellowish brown fine sand to a depth of 35 inches. The upper part of the underlying material, to a depth of 50 inches, is white fine sand that has thin strata of light yellowish brown sand. The lower part, to a depth of 80 inches or more, is white fine sand that has strata of black heavy minerals.

Typically, the surface layer of the Corolla soil is very pale brown fine sand about 4 inches thick. The upper part of the substratum, to a depth of 24 inches, is very pale brown fine sand. Below this, from a depth of 24 to 29 inches, is a buried surface horizon. It is light gray fine sand that has black pockets and streaks. The next part of the substratum, from a depth of 29 to 45 inches, is white fine sand. It has mottles in shades of brown below a depth of 39 inches. Below this, from a depth of 45 to 52 inches, is a second buried surface horizon. It is very dark gray fine sand. The lower part of the substratum, to a depth of 80 inches, is light gray and gray sand that has black pockets and streaks.

Kureb, Corolla, and similar soils make up 95 to 100 percent of the map unit in 95 percent of the areas mapped as Kureb-Corolla complex, rolling. Included in mapping are poorly drained and very poorly drained Duckston soils in low swales and in depressions.

The seasonal high water table is below a depth of 72 inches throughout the year in the Kureb soil. It is at a depth of 18 to 36 inches from November through May in the Corolla soil. Available water capacity is very low. Permeability is rapid in the Kureb soil and very rapid in the Corolla soil.

These soils are in the Sand Pine Scrub ecological community (USDA, 1989). In most areas the sparse natural vegetation consists of sand pine, scattered slash pine, sand live oak, Chapman oak, myrtle oak, wax-myrtle, saw palmetto, and seaoats and various woody shrubs, grasses, and herbaceous plants.

Many areas of these soils have been used for homesites or for commercial or recreational development. Some areas still support the natural vegetation.

These soils are not suited to cultivated crops, pasture, or woodland. The slope, the loose consistency of the surface layer, and droughtiness are severe limitations.

These soils are poorly suited to urban development. Wind erosion, the slope, the rapid and very rapid permeability, and shifting sands are management concerns. The Corolla soil may be flooded during extreme coastal storms. The slope can be reduced by cutting and filling. Because of the risk of ground water pollution, septic systems should be installed only for low-density use and should not be located close to any body of water. Mulching, fertilizing, and irrigating help establish landscape plants and lawn grasses. Care should be taken to protect the natural vegetation because it is adapted to these soils and helps to control erosion. Artificial or adapted vegetative barriers also help to control wind erosion.

If these soils are used as a site for recreational development, such as playgrounds, picnic areas, and paths or trails, placing suitable topsoil over the soils or resurfacing the sandy areas can minimize erosion and improve trafficability.

The capability subclass is VIIs in areas of the Kureb soil and VIIe in areas of the Corolla soil. The woodland ordination symbol is 6S in areas of the Kureb soil. A woodland ordination symbol has not been assigned for areas of the Corolla soil.

49—Quartzipsamments, undulating

These very deep, somewhat poorly drained to excessively drained, modified soils are on high deposits of sandy dredge spoil, primarily along the Gulf County Canal. Slopes range from 0 to 5 percent. Individual areas are elongated and blocky in shape and range from 15 to 100 acres in size.

Quartzipsamments formed in sandy dredge spoil. No single pedon is typical of this map unit. In a commonly encountered profile, however, the surface layer is light gray coarse sand about 4 inches thick. The underlying material is very pale brown coarse sand to a depth of 80 inches or more.

Quartzipsamments and similar soils make up 90 to 100 percent of the map unit in 95 percent of the areas mapped as Quartzipsamments, undulating. Included in mapping are poorly drained Duckston soils on low flats. Also included are soils that are similar to Quartzipsamments but have thin loamy layers within a depth of 60 inches. These similar soils are in landscape positions similar to those of the Quartzipsamments.

The seasonal high water table is at a depth of more than 72 inches. Other soil properties are so variable that they cannot be adequately predicted without onsite investigation.

This map unit cannot be categorized into an ecological community. The vegetation in areas of this map unit is highly variable. At one site it included slash pine, sand pine, wax-myrtle, and various grasses and forbs. Many areas are unvegetated or very sparsely vegetated.

This map unit is so variable that suitability for most land uses cannot be determined without onsite investigation. Some areas, however, are extremely acid because of the oxidation of sulfides in the dredge spoil. This condition can be highly corrosive to metal and concrete, and many plants can not tolerate this condition.

The capability subclass is VIs. A woodland ordination symbol has not been assigned.

50—Wahee-Mantachie-Ochlockonee complex, commonly flooded

These very deep, somewhat poorly drained and moderately well drained soils are on natural levees, in swales, and on low terraces on the flood plain along the Apalachicola River and its major tributaries and distributaries, primarily in the far northern parts of the county. The Wahee soil is on intermediate levees. The Mantachie soil is on the lower slopes of levees and in swales. The Ochlockonee soil is on high levees. In places, the levees coalesce to form a low river terrace. The Wahee and Mantachie soils are somewhat poorly drained. The Ochlockonee soil is moderately well drained. Slopes generally are less than 3 percent. This map unit consists of about 45 percent Wahee soil, 25 percent Mantachie soil, and 20 percent Ochlockonee soil. Individual areas are so intermingled on the landscape that it was impractical to separate them at the scale selected for mapping. Mapped areas are elongated in shape and range from 50 to several hundred acres in size.

Typically, the surface layer of the Wahee soil is dark grayish brown fine sandy loam about 5 inches thick. The subsurface layer, to a depth of 12 inches, is light yellowish brown loamy fine sand. The upper part of the subsoil, to a depth of 43 inches, is light yellowish brown sandy clay that has mottles in shades of red and gray. The lower part of the subsoil, to a depth of 72 inches, is light gray sandy clay that has mottles in shades of brown. The substratum, to a depth of 80 inches, is grayish brown sandy loam that has mottles in shades of brown.

Typically, the surface layer of the Mantachie soil is dark grayish brown and dark yellowish brown fine sandy loam about 5 inches thick. In sequence downward, the subsoil is brown loam to a depth of 12 inches, pale brown silty clay loam to a depth of 20 inches, reddish yellow fine sandy loam to a depth of 28 inches, and light gray loam to a depth of 42 inches. The upper part of the underlying material, to a depth of 65 inches, is gray fine sandy loam. The lower part, to a depth of 80 inches or more, is grayish brown sand.

Typically, the surface layer of the Ochlockonee soil is very dark grayish brown silt loam about 4 inches thick. In sequence downward, the underlying material is yellowish brown loamy sand to a depth of 16 inches, brownish yellow coarse sand to a depth of 21 inches, dark yellowish brown silt loam to a depth of 25 inches, brownish yellow loamy fine sand to a depth of 42 inches, yellowish brown loam to a depth of 55 inches, and gray loam to a depth of 80 inches or more.

Wahee, Mantachie, Ochlockonee, and similar soils make up 75 to 95 percent of the map unit in 85 percent of the areas mapped as Wahee-Mantachie-Ochlockonee complex, commonly flooded. Included in mapping are Brickyard and Meggett soils. The very poorly drained Brickyard soils are in backswamps. The poorly drained Meggett soils are in landscape positions similar those of the Mantachie soil.

The seasonal high water table is at a depth of 12 to 18 inches in the Mantachie soil, 18 to 30 inches in the Wahee soil, and 36 to 60 inches in the Ochlockonee soil from November through April. The Mantachie soil is flooded almost every year. The Wahee soil is flooded

about once in every ten years. The Ochlockonee soil is flooded about once in every twenty years. Available water capacity is moderate in the Wahee and Ochlockonee soils and high in the Mantachie soil. Permeability is moderate in the Ochlockonee and Mantachie soils and slow in the Wahee soil.

These soils are in the Swamp Hardwoods ecological community (USDA, 1989). In most areas the natural vegetation includes slash pine, sycamore, hickory, sweetgum, water oak, river birch, overcup oak, and black maple and an understory of ferns, greenbrier, poison ivy, and various herbaceous plants and grasses. Most areas still support the natural vegetation. Areas of these soils provide excellent habitat for woodland wildlife.

These soils are not suited to cultivated crops, woodland, pasture, hay, or urban or recreational development because of the flooding, wetness, the narrowness of the areas, and isolation by backswamps.

The capability subclass is IIIw in areas of the Wahee soil and IIw in areas of the Mantachie and Ochlockonee soils. The woodland ordination symbol is 8W in areas of the Wahee soil, 10W in areas of the Mantachie soil, and 11A in areas of the Ochlockonee soil.

51—Kenansville-Eulonia complex, 0 to 5 percent slopes

These very deep, moderately well drained soils are on upland terrace ridges between the Dead Lakes and the Apalachicola River. This map unit consists of about 45 percent Kenansville soil and 35 percent Eulonia soil. Individual areas are so intermingled on the landscape that it was impractical to separate them at the scale selected for mapping. Mapped areas are blocky or irregular in shape and range from 3 to 100 acres in size.

Typically, the surface layer of the Kenansville soil is very dark grayish brown loamy fine sand about 6 inches thick. The subsurface layer is yellowish brown loamy fine sand to a depth of 23 inches. The upper part of the subsoil, to a depth of 59 inches, is brownish yellow sandy clay loam. The lower part, to a depth of 71 inches, is yellowish red fine sandy loam. The underlying material is brownish yellow fine sandy loam to a depth of 80 inches or more.

Typically, the surface layer of the Eulonia soil is dark grayish brown fine sandy loam about 7 inches thick. The subsurface layer is light olive brown fine sandy loam to a depth of 11 inches. The upper part of the subsoil, to a depth of 35 inches, is yellowish brown clay. The next part, to a depth of 55 inches, is yellowish brown sandy clay. The lower part, to a depth of 66 inches, is yellowish brown sandy clay loam. The underlying material is olive yellow fine sandy loam to a depth of 80 inches or more.

Kenansville, Eulonia, and similar soils make up 75 to 95 percent of the map unit in 80 percent of the areas mapped as Kenansville-Eulonia complex, 0 to 5 percent slopes. Included in mapping are Blanton and Wahee soils. The moderately well drained Blanton soils are in landscape position similar to those of the Kenansville and Eulonia soils. The somewhat poorly drained Wahee soils are in slight depressions.

The seasonal high water table is at a depth of more than 72 inches in the Kenansville soil. It is at a depth of 18 to 42 inches in the Eulonia soil for about 1 to 3 months in most years. Available water capacity is low. Permeability is moderate in the Kenansville soil and moderately slow in the Eulonia soil.

These soils are in the Longleaf Pine-Turkey Oak Hills ecological community (USDA, 1989). In most areas the natural vegetation includes longleaf pine, turkey oak, and live oak and an understory of wiregrass, ferns, huckleberry, and scattered saw palmetto.

Most areas of this map unit are used for the commercial production of pine.

These soils are moderately suited to most cultivated crops. Droughtiness, wind erosion, and rapid leaching of plant nutrients are management concerns. A soil fertility management system and a well designed irrigation system can increase yields. Returning all crop residue to the soil and using a cropping system that includes grasses, legumes, or a grass-legume mixture help maintain fertility and tilth. A good ground cover of close-growing plants, reduced tillage, and the establishment of wind strips and wind breaks can help to control wind erosion.

These soils are suited to pasture and hay. Droughtiness and rapid leaching of nutrients are the main management concerns. Deep-rooted plants, such as improved bermudagrass and bahiagrass, are more drought tolerant if properly fertilized and limed. Overgrazing on these soils reduces the extent of the plant cover and promotes growth of undesirable species. Proper stocking rates, pasture rotation, and controlled grazing help to keep these soils and the pasture in good condition.

These soils have high potential productivity for loblolly pine and slash pine. The main management concerns are a moderate equipment limitation, moderate seedling mortality, and moderate plant competition. Plant competition can be controlled by herbicides and prescribed burning. The content of organic matter in the surface layer commonly is very

low. Logging systems that leave residue on the site can improve fertility.

These soils are well suited to homesite development. Septic tank absorption fields can be placed on contour, or the slope can be reduced by cutting and filling. Absorption fields can be mounded to lower the effective depth to the water table. Cutting and filling can help to control water erosion on homesites and in areas adjacent to roads. Mulching, fertilizing, and irrigating help establish lawn grasses and other small-seeded plants.

These soils are well suited to small commercial buildings and to local roads and streets.

If these soils are used as a site for recreational development, such as playgrounds, picnic areas, and paths or trails, placing suitable topsoil over the soils or resurfacing the sandy areas can minimize erosion and improve trafficability.

The capability subclass is IIs in areas of the Kenansville soil and IIe in areas of the Eulonia soil. The woodland ordination symbol is 8S in areas of the Kenansville soil and 9W in areas of the Eulonia soil.

52—Dothan loamy sand, 2 to 5 percent slopes

This very deep, well drained soil is on uplands. Individual areas are blocky or irregular in shape and range from 3 to 100 acres in size.

Typically, the surface layer is dark grayish brown loamy sand about 9 inches thick. The subsurface layer is yellowish brown loamy sand to a depth of 16 inches. The upper part of the subsoil, to a depth of 33 inches, is yellowish brown fine sandy loam. The lower part, to a depth of 80 inches or more, is reticulately mottled.

Dothan and similar soils make up 70 to 100 percent of the map unit in 80 percent of the areas mapped as Dothan loamy sand, 2 to 5 percent slopes. Included in mapping are poorly drained Rains soils in depressions.

The seasonal high water table is not within a depth of 60 inches in most years. It can be perched, however, at a depth of 36 to 60 inches after periods of heavy rainfall. Available water capacity is moderate. Permeability is moderately slow.

This soil is in the Mixed Hardwood-Pine ecological community (USDA, 1989). In most areas the natural vegetation includes slash pine, longleaf pine, live oak, laurel oak, post oak, sweetgum, and dogwood and an understory of saw palmetto, blackberry, and wiregrass. Most areas of this soil are used for the commercial production of pine.

This soil is well suited to the production of most cultivated crops. A soil fertility management system and an irrigation system can increase yields.

This soil is suited to pasture and hay plants, such as improved bermudagrass, bahiagrass, and legumes. Controlled grazing helps to keep the plant vigorous. Proper stocking rates, pasture rotation, and controlled grazing help to keep the soil and pasture in good condition.

This soil has high potential productivity for loblolly pine, slash pine, and longleaf pine. The main management concern is moderate plant competition. Plant competition can be controlled by herbicides and prescribed burning. The content of organic matter in the surface layer commonly is very low. Logging systems that leave residue on the site can improve fertility.

This soil is moderately suited to urban development. The seasonal high water table and restricted permeability are management concerns. Septic tank absorption fields can be mounded to maintain the system above the subsoil, can be enlarged to accommodate the restricted permeability, or can be placed on the contour.

This soil is moderately suited to small commercial buildings and to local roads and streets. The restricted permeability is a management concern. Vegetated islands, grassed swales, and well-designed water conveyance structures can help to control the runoff.

If this soil used as a site for recreational development, such as playgrounds, picnic areas, and paths or trails, placing suitable topsoil over the soil or resurfacing the sandy areas can minimize erosion and improve trafficability.

The capability subclass is IIe. The woodland ordination symbol is 9A.

Prime Farmland

In this section, prime farmland is defined and the soils in Gulf County that are considered prime farmland are listed.

Prime farmland is one of several kinds of important farmland defined by the U.S. Department of Agriculture. It is of major importance in meeting the Nation's short- and long-range needs for food and fiber. The acreage of high-quality farmland is limited, and the U.S. Department of Agriculture recognizes that government at local, State, and Federal levels, as well as individuals, must encourage and facilitate the wise use of our Nation's prime farmland.

Prime farmland soils, as defined by the U.S. Department of Agriculture, are soils that are best suited to food, feed, forage, fiber, and oilseed crops. Such soils have properties that favor the economic production of sustained high yields of crops. The soils need only to be treated and managed by acceptable farming methods. The moisture supply must be adequate, and the growing season must be sufficiently long. Prime farmland soils produce the highest yields with minimal expenditure of energy and economic resources. Farming these soils results in the least damage to the environment.

Prime farmland soils may presently be used as cropland, pasture, or woodland or for other purposes. They are used for food or fiber or are available for these uses. Urban or built-up land, public land, and water areas cannot be considered prime farmland. Urban or built-up land is any contiguous unit of land 10 acres or more in size that is used for such purposes as housing, industrial, and commercial sites, sites for institutions or public buildings, small parks, golf courses, cemeteries, railroad yards, airports, sanitary landfills, sewage treatment plants, and water-control structures.

Prime farmland soils usually receive an adequate and dependable supply of moisture from precipitation or irrigation. The temperature and growing season are favorable. The acidity or alkalinity level of the soils is acceptable. The soils have few or no rocks and are permeable to water and air. They are not excessively erodible or saturated with water for long periods and are not frequently flooded during the growing season. The slope ranges mainly from 0 to 8 percent.

The following map units are considered prime farmland in Gulf County. The location of each map unit is shown on the detailed soil maps at the back of this publication. The extent of each unit is given in table 3. The soil qualities that affect use and management are described in the section "Detailed Soil Map Units." This list does not constitute a recommendation for a particular land use.

Some soils that have a high water table and all soils that are frequently flooded during the growing season qualify as prime farmland only in areas where these limitations have been overcome by drainage measures or flood control. Onsite evaluation is necessary to determine if the limitations have been overcome by corrective measures.

The soils identified as prime farmland in Gulf County are:

11 Clarendon loamy fine sand, 2 to 5 percent slopes
52 Dothan loamy sand, 2 to 5 percent slopes

Use and Management of the Soils

This soil survey is an inventory and evaluation of the soils in the survey area. It can be used to adjust land uses to the limitations and potentials of natural resources and the environment. Also, it can help to prevent soil-related failures in land uses.

In preparing a soil survey, soil scientists, conservationists, engineers, and others collect extensive field data about the nature and behavior of the soils. They collect data on erosion, water tables, flooding, and other factors that affect various soil uses and management. Field experience and collected data on soil properties and performance are used as a basis for predicting soil behavior.

Information in this section can be used to plan the use and management of soils for crops and pasture; as woodland; as sites for buildings, sanitary facilities, highways and other transportation systems, and parks and other recreational facilities; and for wildlife habitat. It can be used to identify the potentials and limitations of each soil for specific land uses and to help prevent soil-related failures.

Planners and others using soil survey information can evaluate the effect of specific land uses on productivity and on the environment in all or part of the survey area. The survey can help planners to maintain or create a land use pattern in harmony with the natural soil.

Contractors can use this survey to locate sources of sand and gravel, roadfill, and topsoil. They can use it to identify areas where wetness or very firm soil layers can cause difficulty in excavation.

Health officials, highway officials, engineers, and others may also find this survey useful. The survey can help them plan the safe disposal of wastes and locate sites for pavements, sidewalks, campgrounds, playgrounds, lawns, and trees and shrubs.

Crops and Pasture

General management needed for crops and pasture is suggested in this section. The system of land capability classification used by the Natural Resources Conservation Service is explained, and the estimated yields of the main hay and pasture plants are listed for each soil.

Planners of management systems for individual fields or farms should consider the detailed information given in the description of each soil under the heading “Detailed Soil Map Units.” Specific information can be obtained from the local office of the Natural Resources Conservation Service or the Cooperative Extension Service.

In 1987, Gulf County had 30,000 acres of crops and pasture. This acreage is decreasing somewhat because of conversion to woodland. Rice, wheat, soybeans, corn, and watermelons are commonly grown field crops. Most of the pastureland is used to produce forage for grazing cattle. Blueberries and pecans are also produced in the county, primarily by one large agricultural operation.

Small acreages of vegetables and small livestock herds produce food and extra income for a number of Gulf County residents. Bee-keeping is conducted extensively on the flood plain along the Apalachicola River. Large stands of tupelo trees contribute to a superior honey crop. When the tupelo trees are not in bloom, palmetto, titi, and other species contribute to the honey crop. Large aquaculture operations are located near Howard Creek. Crawfish, catfish, and telapia are the main species produced (fig. 7).

Yields per Acre

The average yields per acre that can be expected of the principal hay and pasture crops under a high level of management are shown in table 4. In any given year, yields may be higher or lower than those indicated in the table because of variations in rainfall and other climatic factors.

The yields are based mainly on the experience and records of farmers, conservationists, and extension agents. Available yield data from nearby counties and results of field trials and demonstrations are also considered.

The management needed to obtain maximum yields of various crops depends on the kind of soil and the crop. Management can include drainage, erosion control, and protection from flooding; the proper planting and seeding rates; suitable high-yielding crop varieties; appropriate and timely tillage; control of weeds, plant diseases, and harmful insects; favorable

Figure 7.—Crawfish traps protruding from the shallow water of an impoundment constructed and managed for the production of crawfish.

soil reaction and optimum levels of nitrogen, phosphorus, potassium, and trace elements for each crop; effective use of crop residue, barnyard manure, and green manure crops; and harvesting that ensures the smallest possible loss.

The estimated yields reflect the productive capacity of each soil for each of the principal crops. Yields are likely to increase as new production technology is developed. The productivity of a given soil compared with that of other soils, however, is not likely to change.

The local office of the Natural Resources Conservation Service or of the Cooperative Extension Service can provide information about the management and productivity of the soils. Yields for pasture and hay crops are expressed in animal-unit-months per acre. One animal-unit-month is the amount of forage needed to feed one animal unit (one cow, one horse, one mule, five sheep, or five goats) for one month.

Land Capability Classification

Land capability classification shows, in a general way, the suitability of soils for use as cropland. Crops that require special management are excluded. The soils are grouped according to their limitations for field crops, the risk of damage if they are used for crops, and the way they respond to management. The criteria used in grouping the soils do not include major and generally expensive landforming that would change slope, depth, or other characteristics of the soils, nor do they include possible but unlikely major reclamation projects. Capability classification is not a substitute for interpretations designed to show suitability and limitations of groups of soils for rangeland, for woodland, or for engineering purposes.

In the capability system, soils are generally grouped at three levels—capability class, subclass, and unit. Only class and subclass are used in this survey.

Capability classes, the broadest groups, are designated by Roman numerals I through VIII. The numerals indicate progressively greater limitations and narrower choices for practical use. The classes are defined as follows:

Class I soils have few limitations that restrict their use. There are no class I soils in Gulf County.

Class II soils have moderate limitations that reduce the choice of plants or that require moderate conservation practices.

Class III soils have severe limitations that reduce the choice of plants or that require special conservation practices, or both.

Class IV soils have very severe limitations that reduce the choice of plants or that require very careful management, or both.

Class V soils are not likely to erode, but they have other limitations, impractical to remove, that limit their use.

Class VI soils have severe limitations that make them generally unsuitable for cultivation.

Class VII soils have very severe limitations that make them unsuitable for cultivation.

Class VIII soils and miscellaneous areas have limitations that nearly preclude their use for commercial crop production.

Capability subclasses are soil groups within one class. They are designated by adding a small letter, *e, w,* or *s,* to the class numeral, for example, IIe. The letter *e* shows that the main hazard is the risk of erosion unless a close-growing plant cover is maintained; *w* shows that water in or on the soil interferes with plant growth or cultivation (in some soils the wetness can be partly corrected by artificial drainage); and *s* shows that the soil is limited mainly because it is shallow, droughty, or stony.

The soils in class V are subject to little or no erosion, but they have other limitations that restrict their use to pasture, rangeland, woodland, wildlife habitat, or recreation.

Ecological Communities

John F. Vance, Jr., biologist, and Gregory R. Brannon, soil data quality specialist, Natural Resources Conservation Service, helped prepare this section.

The ecological community concept is based on the knowledge that a soil type commonly supports a specific vegetative community, which in turn provides the habitat needed by specific wildlife species.

Vegetative communities form recognizable units on the landscape, most of which are apparent to the casual observer after only a little training. Even without prior botanical training, an observer can quickly learn to distinguish between pine flatwoods and pine-turkey oak sandhills, between hardwood hammocks and cypress swamps, and between mangrove swamps and salt marsh. Once a community is recognized, information can be found concerning the general characteristics of the soil on which it occurs and the types of plants and animals it supports.

Although some plants are found only within a very narrow range of conditions, many plants can survive throughout a wide range of conditions. Individual plants that have a wide tolerance level can occur in many different communities and on a variety of soils. When describing ecological communities, plant scientists study the patterns in which vegetation occurs. They study what species occur, the relative abundance of each species, the stage of plant succession, the dominance of species, the position of species on the landscape, and the soil or soils on which the patterns occur. Recognizable patterns of vegetation are usually found in a small group of soil types that have common characteristics. During many years of field observations while conducting soil surveys, the Natural Resources Conservation Service determined which vegetative communities commonly occur on which soils throughout Florida. This information is summarized in the booklet “26 Ecological Communities of Florida” (USDA, 1989).

In the following paragraphs, the vegetative community occurring on individual map units during the climax state of plant succession is described. The community described is based on relatively natural conditions. Human activities, such as commercial production of pine, agriculture, urbanization, and fire suppression, can alter the community on a specific site and should be considered. Miscellaneous map units are not classified.

North Florida Coastal Strand

Areas of the North Florida Coastal Strand ecological community generally are large, narrow and long, and parallel to the coastal beaches. Small, isolated communities can also be found along some bays and sounds. These areas are affected by salt spray from the Gulf of Mexico and saltwater bays. The vegetation is dominated by cabbage palm, sand live oak, live oak, saw palmetto, Spanish bayonet, yaupon holly, and redbay. Herbaceous plants and grasses include blanket flower, fiddleleaf morningglory, largeleaf pennywort, seapurslane, greenbrier, gulf bluestem, sandbur, seaoats, seashore panicum, low panicum, and seashore saltgrass. The map units that support the North

Florida Coastal Strand ecological community in Gulf County are:

10 Corolla fine sand, 1 to 5 percent slopes
46 Corolla-Duckston, complex, gently undulating, flooded

Sand Pine Scrub

Areas of the Sand Pine Scrub ecological community generally are small, no larger than a few hundred acres. These areas are typically dominated by even-aged sand pine trees. Other trees include bluejack oak, Chapman's oak, myrtle oak, sand live oak, and sand pine. The dense understory of oaks, saw palmetto, and other shrubs is dominated by dwarf huckleberry, gopher apple, pricklypear, saw palmetto, grassleaf goldaster, deermoss, cat greenbrier, yellow Indiangrass, and low panicum. The map units that support the Sand Pine Scrub ecological community in Gulf County are:

47 Newhan-Corolla complex, rolling
48 Kureb-Corolla complex, rolling

Longleaf Pine-Turkey Oak Hills

The Longleaf Pine-Turkey Oak Hills ecological community is dominated by longleaf pine and by turkey oak, bluejack oak, and sand post oak. Common shrubs include Adam's needle, coontie, coralbean, shining sumac, and yaupon. Pricklypear cactus, partridge pea, blazingstar, elephantsfoot, wiregrass, grassleaf goldaster, yellow Indiangrass, and dropseed are common. The map units that support the Longleaf Pine-Turkey Oak Hills ecological community in Gulf County are:

6 Blanton sand, 0 to 5 percent slopes
16 Ortega fine sand, 0 to 5 percent slopes
33 Resota fine sand, 0 to 5 percent slopes
51 Kenansville-Eulonia complex, 0 to 5 percent slopes

Mixed Hardwood-Pine

The Mixed Hardwood-Pine ecological community is an extension of the middle coastal plains hardwoods forest. Individual communities vary in size and are interspersed with other communities and natural drainageways. The type and amount of vegetation vary depending on the successional stage. In the early successional stages, pine is present and shortleaf pine and loblolly pine are the dominant species. As the system matures, hardwoods replace pines and the natural climax vegetation is a beech-magnolia-maple association. The dominant trees and shrubs are American beech, American holly, eastern hophornbeam, flowering dogwood, hawthorns, loblolly pine, mockernut hickory, pignut hickory, southern red oak, southern magnolia, white oak, water oak, shining sumac, and sparkle berry. Herbaceous plants and grasses include aster, common ragweed, partridgeberry, poison ivy, violet, Virginia creeper, wild grape, broomsedge bluestem, longleaf uniola, low panicum, and spike uniola. The map units that support the Mixed Hardwood-Pine ecological community in Gulf County are:

11 Clarendon loamy fine sand, 2 to 5 percent slopes
12 Dothan-Fuquay complex, 5 to 8 percent slopes
15 Wahee fine sandy loam
17 Fuquay loamy fine sand
19 Lucy loamy fine sand, 0 to 5 percent slopes
21 Leefield loamy fine sand
26 Ocilla loamy fine sand, overwash, occasionally flooded
35 Stilson loamy fine sand, 0 to 5 percent slopes
52 Dothan loamy sand, 2 to 5 percent slopes

North Florida Flatwoods

The North Florida Flatwoods ecological community is normally dominated by slash pine and by live oak and sand live oak on the slightly higher ridges and an understory of saw palmetto, gallberry, and grasses. Scattered pond pine, water oak, laurel oak, sweetgum, wax-myrtle, and several species of blueberry are also common. Chalky bluestem, broomsedge bluestem, lopsided Indiangrass, low panicums, switchgrass, and wiregrass are the common grasses. Other common plants include grassleafed goldaster, blackberry, brackenfern, deertongue, gayfeather, milkworts, and a variety of seed producing legumes. The map units that support the North Florida Flatwoods ecological community in Gulf County are:

2 Albany sand
3 Alapaha loamy fine sand
9 Ridgewood fine sand
20 Lynn Haven fine sand
22 Leon fine sand
24 Mandarin fine sand
27 Pelham loamy fine sand
28 Plummer fine sand
36 Sapelo sand
37 Scranton fine sand
42 Pottsburg fine sand

Salt Marsh

The Salt Marsh ecological community is dominated by grasses and grasslike plants, such as smooth cordgrass, black needlerush, gulf cordgrass,

Figure 8.—An area of Bayvi and Dirego soils, frequently flooded. This map unit is in the Salt Marsh ecological community and is subject to daily tidal fluctuations.

marshhay cordgrass, Olney's bulrush, and seashore dropseed. Sea blite, seaoxeye, and seapurslane are the herbaceous plants and vines (fig. 8). The map units that support the Salt Marsh ecological community in Gulf County are:

7 Bayvi and Dirego soils, frequently flooded
14 Duckston-Duckston, depressional, complex, frequently flooded
23 Maurepas muck, frequently flooded

Bottomland Hardwoods

The Bottomland Hardwoods ecological community occurs on the flood plains along the Apalachicola and Ochlockonee Rivers. It is in areas characterized by rapid rise and fall of floodwater and little or no inundation during the growing season. Vegetation is extremely variable. It is dominated by hardwoods and a relatively clean understory. Shrubs, vines, grasses, and herbaceous plants grow profusely where sunlight penetrates the canopy. The overstory is dominated by American Elm, American hornbeam, black willow, green ash, overcup oak, river birch, swamp chestnut oak, Shumard's oak, sweetgum, water hickory, water oak, and willow oak. Herbaceous plants include crossvine, greenbriers, poison ivy, trumpet creeper, and wild grape. The map unit that supports the Bottomland Hardwoods ecological community in Gulf County is:

25 Meggett fine sandy loam, occasionally flooded

Swamp Hardwoods

The Swamp Hardwoods ecological community is dominated by blackgum, red maple, Ogeechee lime, cypress, and bay trees. Common shrubs include fetterbush, Virginia willow, buttonbush, and wax-myrtle. Common herbaceous plants and vines include wild

grape, greenbrier, and poison ivy. Maidencane grass, cinnamon fern, and Sphagnum moss are also common. The map units that support the Swamp Hardwoods ecological community in Gulf County are:

13 Dorovan-Croatan complex, depressional
30 Pantego and Bayboro soils, depressional
40 Brickyard silty clay, frequently flooded
41 Brickyard, Chowan, and Kenner soils, frequently flooded
44 Pamlico-Pickney complex, frequently flooded
45 Croatan-Surrency complex, frequently flooded
50 Wahee-Mantachie-Ochlockonee complex, commonly flooded

Shrub Bogs-Bay Swamp

The Shrub Bogs-Bay Swamp ecological community is dominated by a dense mass of evergreen shrubby vegetation. It is dominated by large gallberry, fetterbush, myrtleleaved holly, swamp cyrilla (titi), greenbriers, sweetpepperbush, and sweetbay. Scattered slash pine and pond pine are present. Cinnamon fern, maidencane grass, and club moss commonly fill in open areas. Shrub bogs are predominantly dense masses of evergreen, shrubby vegetation that seldom exceeds 25 feet in height. Bay swamps are forested wetlands dominated by one or two species of evergreen trees. The bay swamp is considered to be a climax community that has mature trees; the shrub bogs are in the earlier stages of plant succession. Periodic fires help to keep some areas in the shrub bog, or subclimax, stage, especially the titi types. The shrubs have many stems and thick foliage and commonly appear impenetrable. The map units that support the Shrub Bogs-Bay Swamp ecological community in Gulf County are:

31 Pickney-Pamlico complex, depressional
34 Pickney and Rutlege soils, depressional
38 Meadowbrook fine sand, occasionally flooded
39 Surrency mucky fine sand, depressional

Pitcher Plant Bogs

The Pitcher Plant Bogs ecological community is dominated by pitcher plants and scattered slash pine, longleaf pine, and wax-myrtle. It is characterized by open areas of grasses, sedges, and pitcher plants and scattered areas of pine and cypress. At times, it is covered with wildflowers. Most areas of this ecological community are no more than 100 acres in size. Other herbaceous plants and grasses include rush featherling, sundews, blue maidencane, Florida threeawn, pineland threeawn, toothache grass, and warty panicum. The map units that support the Pitcher Plant Bogs ecological community in Gulf County are:

5 Bladen fine sandy loam
32 Rains fine sandy loam

Woodland Management and Productivity

Approximately 322,000 acres, or 87 percent of Gulf County, is woodland. About 60 percent of the county is owned by large woodland products companies. The remaining woodland is owned by smaller land owners.

Slash pine is the dominant woodland species grown in the county, especially in areas of the flatwoods (fig. 9). The flatwoods make up about 55 percent of the woodland in the county. Most sparse pine stands have been clear-cut and planted with improved slash pine. The primary plant species in areas of the flatwoods and wet flats in the southern coastal part of the county are gallberry, wax-myrtle, black titi, fetterbush, saw palmetto, and wiregrass. The primary plant species in areas of the flatwoods and drainageways in the interior and northern parts of the county are laurel oak, gallberry, sweetbay, wax-myrtle, saw palmetto, and wiregrass. The major soils in areas of the flatwoods are Plummer, Pelham, Scranton, Leon, Albany, Alapaha, Lynn Haven, and Mandarin soils.

The depressions, sloughs, and small creeks in the county support black titi, baldcypress, pondcypress, sweetbay, slash pine, and blackgum. These areas make up about 20 percent of the woodland in the county. They are planted and harvested when the seasonal high water table is low so that heavy equipment can be used. In natural condition, many of the soils in these areas are marginal or unsuited to pine growth because of wetness. The major soils in these areas are Surrency, Pantego, Rutlege, Pickney, Pamlico, and Croatan soils.

The areas on flood plains along the Apalachicola River support water tupelo, blackgum, red maple, sweetgum, magnolia, baldcypress, slash pine, laurel oak, and overcup oak. These areas makes up about 12 percent of the woodland in the county. They were used extensively for logging in the past, but most of the acreage is not currently managed for commercial uses. Tree size, low commercial value of many species, and difficulty in working on flood plain soils are contributing factors to low harvest feasibility in these areas. Also, much of the extensive flood plains along the Apalachicola River is owned by the Federal and State Governments. A small part of the flood plains in the northeastern part of the county is managed for hardwoods. The major soils on the flood plains are Brickyard, Chowan, Kenner, Mantachie,

Figure 9.—A well managed stand of slash pine in an area of Albany sand.

Meggett, Meadowbrook, Ochlockonee, and Wahee soils.

The upland areas north and south of Wewahitchka support longleaf pine, loblolly pine, and mixed hardwoods. These areas make up about 7 percent of the woodland in the county. Many of these areas have been cleared for agriculture and urban development. The major soils on the uplands are Leefield, Stilson, Blanton, Fuquay, and Dothan soils.

The northeast corner of the county between the Dead Lakes and the flood plain along the Apalachicola River supports loblolly pine, longleaf pine, spruce pine, and mixed hardwoods. This area is used for the commercial production of pines and hardwoods. It makes up about 4 percent of the woodland in the county.

Sandhill areas in the county support longleaf pine, sand pine, and mixed hardwoods. These areas make up about 2 percent of the woodland in the county. Small, localized areas of sandhills are in the west-central part of the county and on the remnant dunes near the gulf coast. The major soils in the sandhill areas are Kureb, Resota, Ridgewood, and Ortega soils.

Timber management in the county ranges from intensive clear-cutting, bedding, and planting to selective cutting. In many areas used for pine, prescribed burning is important for minimizing plant competition and for exposing mineral soils as a bed for young seedlings.

Some of the pine wood grown in Gulf County is processed at a paper mill located in nearby Panama City.

Several small lumber mills are located in the county. They process timber primarily for specialty uses.

More detailed information regarding woodland and forest management can be obtained at the local offices of the Florida Division of Forestry, the Natural Resources Conservation Service, the Florida Cooperative Extension Service, and the Farm Service Agency.

This soil survey can be used by managers planning ways to increase the productivity of woodland. Some soils respond better to applications of fertilizer than others, and some are more susceptible to erosion after roads are built and timber is harvested. Some soils require special efforts to reforest. For each map unit in the survey area suitable for producing timber, the section “Detailed Soil Map Units” presents information about productivity, limitations for harvesting timber, and management concerns for producing timber. The common forest understory plants are also listed. Table 5 summarizes this forestry information and rates the soils for a number of factors to be considered in management. *Slight, moderate,* and *severe* are used to indicate the degree of the major soil limitations to be considered in forest management.

The first tree listed for each soil under the column “Common trees” is the indicator species for that soil. An indicator species is a tree that is common in the area and that is generally the most productive on a given soil.

Table 5 lists the *ordination symbol* for each soil. The first part of the ordination symbol, a number, indicates the potential productivity of a soil for the indicator species in cubic meters per hectare. The larger the number, the greater the potential productivity. Potential productivity is based on the site index and the point where mean annual increment is the greatest.

The second part of the ordination symbol, a letter, indicates the major kind of soil limitation for use and management. The letter *W* indicates a soil in which excessive water, either seasonal or year-round, causes a significant limitation. The letter *S* indicates a dry sandy soil. The letter *A* indicates that a soil has no significant restrictions or limitations for forest use and management. If a soil has more than one limitation, the priority is W and then S.

Ratings of the *erosion hazard* indicate the probability that damage may occur if site preparation activities or harvesting operations expose the soil. The risk is *slight* if no particular preventive measures are needed under ordinary conditions; *moderate* if erosion-control measures are needed for particular silvicultural activities; and *severe* if special precautions are needed to control erosion for most silvicultural activities. Ratings of moderate or severe indicate the need for construction of higher standard roads, additional maintenance of roads, additional care in planning of harvesting and reforestation operations, or use of specialized equipment.

Ratings of the *equipment limitation* indicate limits on the use of forest management equipment, year-round or seasonal, because of such soil characteristics as slope, wetness, or susceptibility of the surface layer to compaction. As slope gradient and length increase, it becomes more difficult to use wheeled equipment. On the steeper slopes, tracked equipment must be used. On the steepest slopes, even tracked equipment cannot be operated; more sophisticated systems are needed. The rating is *slight* if equipment use is restricted by soil wetness for less than 2 months and if special equipment is not needed. The rating is *moderate* if slopes are steep enough that wheeled equipment cannot be operated safely across the slope, if soil wetness restricts equipment use from 2 to 6 months per year, or if special equipment is needed to avoid or reduce soil compaction. The rating is *severe* if slopes are steep enough that tracked equipment cannot be operated safely across the slope, if soil wetness restricts equipment use for more than 6 months per year, or if special equipment is needed to avoid or reduce soil compaction. Ratings of *moderate* or *severe* indicate a need to choose the most suitable equipment and to carefully plan the timing of harvesting and other management operations.

Ratings of *seedling mortality* refer to the probability of death of naturally occurring or properly planted seedlings of good stock in periods of normal rainfall as influenced by kinds of soil or topographic features. Seedling mortality is caused primarily by too much water or too little water. The factors used in rating a soil for seedling mortality are texture of the surface layer, depth and duration of the water table, rooting depth, and the aspect of the slope. Mortality generally is greatest on soils that have a sandy or clayey surface layer. The risk is *slight* if, after site preparation, expected mortality is less than 25 percent; *moderate* if expected mortality is between 25 and 50 percent; and *severe* if expected mortality exceeds 50 percent. Ratings of *moderate* or *severe* indicate that it may be necessary to use containerized or larger than usual planting stock or to make special site preparations, such as bedding, furrowing, or installing surface drainage. Reinforcement planting is often needed if the risk is moderate or severe.

Ratings of the *windthrow hazard* indicate the likelihood of trees being uprooted by the wind. Restricted rooting depth is the main reason for windthrow. Rooting depth can be restricted by a high

water table or by such factors as soil wetness, texture, structure, and depth. The risk is *slight* if strong winds cause trees to break but do not uproot them; *moderate* if strong winds cause an occasional tree to be blown over and many trees to break; and *severe* if moderate or strong winds commonly blow trees over. Ratings of *moderate* or *severe* indicate the need for care in thinning or possibly not thinning. Specialized equipment may be needed to avoid damage to shallow root systems in partial cutting operations. A plan for periodic salvage of windthrown trees and the maintenance of a road and trail system may be needed.

Ratings of *plant competition* indicate the likelihood of the growth or invasion of undesirable plants. Plant competition becomes more severe on the more productive soils, on poorly drained soils, and on soils having a restricted root zone that holds moisture. The risk is *slight* if competition from undesirable plants inhibits adequate natural or artificial reforestation but does not necessitate intensive site preparation and maintenance. The risk is *moderate* if competition from undesirable plants inhibits natural or artificial reforestation to the extent that intensive site preparation and maintenance are needed. The risk is *severe* if competition from undesirable plants prevents adequate natural or artificial reforestation unless the site is intensively prepared and maintained. A *moderate* or *severe* rating indicates the need for site preparation to ensure the development of an adequately stocked stand. Site preparation measures are needed to ensure reforestation without delays.

The *potential productivity* of *common trees* on a soil is expressed as a *site index* and a *productivity class*. Common trees are listed in the order of their observed general occurrence. Generally, only two or three tree species dominate.

The *site index* is determined by taking height measurements and determining the age of selected trees within stands of a given species. This index is the average height, in feet, that the trees attain in a specified number of years. This index applies to fully stocked, even-aged, unmanaged stands.

The *productivity class* represents the expected volume produced by the most important trees, expressed in cubic meters per hectare per year at the age of culmination of mean annual increment. Cubic meters per hectare can be converted to cubic feet per acre by multiplying by 14.3. Cubic feet can be converted to board feet by multiplying by a factor of about 5. For example, a productivity class of 8 means the soil can be expected to produce 114 cubic feet per acre per year at the point where mean annual increment culminates, or about 570 board feet per acre per year.

Trees to plant are those that are used for reforestation or, if suitable conditions exist, natural regeneration. They are suited to the soils and can produce a commercial wood crop. The desired product, topographic position (such as a low, wet area), and personal preference are three factors of many that can influence the choice of trees used for reforestation.

Windbreaks and Environmental Plantings

Windbreaks protect livestock, buildings, and yards from wind. They also protect fruit trees and gardens, and they furnish habitat for wildlife. Several rows of low- and high-growing broadleaf and coniferous trees and shrubs provide the most protection.

Field windbreaks are narrow plantings made at right angles to the prevailing wind and at specific intervals across the field. The interval depends on the erodibility of the soil. Field windbreaks protect cropland and crops from wind and provide food and cover for wildlife.

Environmental plantings help to beautify and screen houses and other buildings and to abate noise. The plants, mostly evergreen shrubs and trees, are closely spaced. To ensure plant survival, a healthy planting stock of suitable species should be planted properly on a well prepared site and maintained in good condition.

Additional information on planning windbreaks and screens and on planting and caring for trees and shrubs can be obtained from the local office of the Natural Resources Conservation Service or the Cooperative Extension Service or from a nursery.

Recreation

In table 6, the soils of the survey area are rated according to the limitations that affect their suitability for recreation. The ratings are based on restrictive soil features, such as wetness, slope, and texture of the surface layer. Susceptibility to flooding is considered. Not considered in the ratings, but important in evaluating a site, are the location and accessibility of the area, the size and shape of the area and its scenic quality, vegetation, access to water, potential water impoundment sites, and access to public sewer lines. The capacity of the soil to absorb septic tank effluent and the ability of the soil to support vegetation are also important. Soils subject to flooding are limited for recreational uses by the duration and intensity of flooding and the season when flooding occurs. In planning recreational facilities, onsite assessment of

the height, duration, intensity, and frequency of flooding is essential.

In the table, the degree of soil limitation is expressed as slight, moderate, or severe. *Slight* means that soil properties are generally favorable and that limitations, if any, are minor and easily overcome. *Moderate* means that limitations can be overcome or alleviated by planning, design, or special maintenance. *Severe* means that soil properties are unfavorable and that limitations can be offset by soil reclamation, special design, intensive maintenance, limited use, or a combination of these measures.

The information in the table can be supplemented by other information in this survey, for example, interpretations for septic tank absorption fields in table 9 and interpretations for dwellings without basements and for local roads and streets in table 8.

Camp areas require site preparation, such as shaping and leveling the tent and parking areas, stabilizing roads and intensively used areas, and installing sanitary facilities and utility lines. Camp areas are subject to heavy foot traffic and some vehicular traffic. The best soils have gentle slopes and are not wet or subject to flooding during the period of use. The surface has few or no stones, absorbs rainfall readily but remains firm, and is not dusty when dry. Strong slopes can greatly increase the cost of constructing campsites.

Picnic areas are subject to heavy foot traffic. Most vehicular traffic is confined to access roads and parking areas. The best soils for picnic areas are firm when wet, are not dusty when dry, are not subject to flooding during the period of use, and do not have steep slopes that increase the cost of shaping sites or of building access roads and parking areas.

Playgrounds require soils that can withstand intensive foot traffic. The best soils are almost level and are not wet or subject to flooding during the season of use. The surface is firm after rains and is not dusty when dry. If grading is needed, the depth of the soil over bedrock or a hardpan should be considered.

Paths and trails for hiking and horseback riding should require little or no cutting and filling. The best soils are not wet, are firm after rains, are not dusty when dry, and are not subject to flooding more than once a year during the period of use. They have moderate slopes and few or no stones on the surface.

Golf fairways are subject to heavy foot traffic and some light vehicular traffic. Cutting or filling may be required. The best soils for use as golf fairways are firm when wet, are not dusty when dry, and are not subject to prolonged flooding during the period of use. They have moderate slopes. The suitability of the soil for tees or greens is not considered in rating the soils.

Wildlife Habitat

Fish and wildlife resources are valuable to both the local economy and to the lifestyles of Gulf County residents. Fishing and hunting attract tourists throughout the county, and numerous commercial vessels bring their catch to the docks in Gulf County. Habitat diversity is a prime factor contributing to the diverse and abundant fish and wildlife resources in the county.

In many areas in the county, the wildlife habitat is characterized by the interspersion of diverse natural communities, including pine flatwoods, swamps, marshes, rivers, hammocks, and sandhills. Other areas are vast and relatively uniform, such as the forested flood plain along the Apalachicola River. Some areas feature a gradual transition from one natural community to another. An example is the transition from forested flood plain to tidal marshes along the Jackson River and Lake Wimico.

The pattern of land use and ownership is a major factor affecting the large extent of wildlife habitat. In 1992, over 300,000 acres was woodland. Much of this woodland is owned by a single company. Numerous shallow ponds that are owned by aquacultural operations in the southern part of the county are major contributors of habitat for waterfowl and other water birds. State lands include the 2,300 acre St. Joseph T.H. Stone Memorial State Park and the adjacent St. Joseph Wilderness Preserve, the St. Joseph Bay Buffer Preserve, the Edward Ball Wildlife Management Area in the southeastern part of the county, the Dead Lakes State Recreation Area, the St. Joseph Bay Aquatic Preserve, and the Apalachicola River Wildlife and Environmental Area. Other smaller tracts have been acquired by the State and local governments as environmental buffers or preservation areas.

Primary game species in Gulf County include white-tailed deer, squirrels, rabbit, turkey, bobwhite quail, mourning dove, feral hogs, and waterfowl. Common nongame species include raccoon, opossum, skunk, otter, gray fox, red fox, and bobcat and a variety of song birds, wading birds, shore birds, raptors, reptiles, and amphibians.

Only a few freshwater lakes and ponds are in the county. Most are smaller than 25 acres and are near Wewahitchka. The Dead Lakes are not really lakes but are actually a drowned flood plain of the Chipola River and have a flowing channel. Lake Wimico is also not a lake. It is a large, shallow bay. The lakes, ponds, and river provide good sport fishing. Game and nongame species include largemouth bass, channel catfish, bullhead catfish, bluegill, redear sunfish, spotted sunfish, warmouth, black crappie, chain pickerel, gar,

bowfin, and suckers. Saltwater species include spotted trout, spot, croaker, striped mullet, flounder, sheepshead, and red drum.

A number of endangered and threatened species inhabit Gulf County. In 1991, the Florida Game and Freshwater Fish Commission listed 24 species in a protected category of endangered, threatened, or species of special concern. These species range from the seldom seen red-cockaded woodpecker to the more common southeastern kestrel. The Atlantic loggerhead turtle is an example of a threatened migratory species that utilizes habitat in the county. It visits the area beaches annually during the summer and lays eggs. A detailed list of these species and information on their range and habitat needs is available from the district conservation office of the Natural Resources Conservation Service.

Soils affect the kind and amount of vegetation that is available to wildlife as food and cover. They also affect the construction of water impoundments. The kind and abundance of wildlife depend largely on the amount and distribution of food, cover, and water. Wildlife habitat can be created or improved by planting appropriate vegetation, by maintaining the existing plant cover, or by promoting the natural establishment of desirable plants.

In table 7, the soils in the survey area are rated according to their potential for providing habitat for various kinds of wildlife. This information can be used in planning parks, wildlife refuges, nature study areas, and other developments for wildlife; in selecting soils that are suitable for establishing, improving, or maintaining specific elements of wildlife habitat; and in determining the intensity of management needed for each element of the habitat.

The potential of the soil is rated good, fair, poor, or very poor. A rating of *good* indicates that the element or kind of habitat is easily established, improved, or maintained. Few or no limitations affect management, and satisfactory results can be expected. A rating of *fair* indicates that the element or kind of habitat can be established, improved, or maintained in most places. Moderately intensive management is required for satisfactory results. A rating of *poor* indicates that limitations are severe for the designated element or kind of habitat. Habitat can be created, improved, or maintained in most places, but management is difficult and must be intensive. A rating of *very poor* indicates that restrictions for the element or kind of habitat are very severe and that unsatisfactory results can be expected. Creating, improving, or maintaining habitat is impractical or impossible.

The elements of wildlife habitat are described in the following paragraphs.

Grain and seed crops are domestic grains and seed-producing herbaceous plants. Soil properties and features that affect the growth of grain and seed crops are depth of the root zone, texture of the surface layer, available water capacity, wetness, slope, surface stoniness, and flooding. Soil temperature and soil moisture are also considerations. Examples of grain and seed crops are corn, wheat, oats, and millet.

Grasses and legumes are domestic perennial grasses and herbaceous legumes. Soil properties and features that affect the growth of grasses and legumes are depth of the root zone, texture of the surface layer, available water capacity, wetness, surface stoniness, flooding, and slope. Soil temperature and soil moisture are also considerations. Examples of grasses and legumes are fescue, cowpeas, bahiagrass, clover, and alfalfa.

Wild herbaceous plants are native or naturally established grasses and forbs, including weeds. Soil properties and features that affect the growth of these plants are depth of the root zone, texture of the surface layer, available water capacity, wetness, surface stoniness, and flooding. Soil temperature and soil moisture are also considerations. Examples of wild herbaceous plants are bluestem, goldenrod, beggarweed, partridge peas, and switchgrass.

Hardwood trees and woody understory produce nuts or other fruit, buds, catkins, twigs, bark, and foliage. Soil properties and features that affect the growth of hardwood trees and shrubs are depth of the root zone, available water capacity, and wetness. Examples of these plants are oak, wild grape, cherry, sweetgum, cabbage palm, hawthorn, dogwood, hickory, blackberry, and blueberry. Examples of fruit-producing shrubs that are suitable for planting on soils rated good are wild plum, autumn olive, and crabapple.

Coniferous plants furnish browse and seeds. Soil properties and features that affect the growth of coniferous trees, shrubs, and ground cover are depth of the root zone, available water capacity, and wetness. Examples of coniferous plants are pine, baldcypress, and cedar.

Wetland plants are annual and perennial wild herbaceous plants that grow on moist or wet sites. Submerged or floating aquatic plants are excluded. Soil properties and features affecting wetland plants are texture of the surface layer, wetness, reaction, salinity, slope, and surface stoniness. Examples of wetland plants are smartweed, wild millet, pickerelweed, wildrice, saltgrass, cordgrass, rushes, sedges, and reeds.

Shallow water areas have an average depth of less than 5 feet. Some are naturally wet areas. Others are created by dams, levees, or other water-control

structures. Soil properties and features affecting shallow water areas are depth to bedrock, wetness, surface stoniness, slope, and permeability. Examples of shallow water areas are marshes, waterfowl feeding areas, and ponds.

The habitat for various kinds of wildlife is described in the following paragraphs.

Habitat for openland wildlife consists of cropland, pasture, meadows, and areas that are overgrown with grasses, herbs, shrubs, and vines. These areas produce grain and seed crops, grasses and legumes, and wild herbaceous plants. Wildlife attracted to these areas include bobwhite quail, meadowlark, field sparrow, cottontail rabbit, and red fox.

Habitat for woodland wildlife consists of areas of deciduous plants or coniferous plants or both and associated grasses, legumes, and wild herbaceous plants. Wildlife attracted to these areas include wild turkey, woodcock, thrushes, woodpeckers, squirrels, gray fox, raccoon, deer, and bear.

Habitat for wetland wildlife consists of open, marshy or swampy shallow water areas. Some of the wildlife attracted to such areas are ducks, egrets, herons, shore birds, alligator, mink, otter, and beaver.

Engineering

This section provides information for planning land uses related to urban development and to water management. Soils are rated for various uses, and the most limiting features are identified. Ratings are given for building site development, sanitary facilities, construction materials, and water management. The ratings are based on observed performance of the soils and on the estimated data and test data in the “Soil Properties” section.

Information in this section is intended for land use planning, for evaluating land use alternatives, and for planning site investigations prior to design and construction. The information, however, has limitations. For example, estimates and other data generally apply only to that part of the soil within a depth of 5 or 6 feet. Because of the map scale, small areas of different soils may be included within the mapped areas of a specific soil.

The information is not site specific and does not eliminate the need for onsite investigation of the soils or for testing and analysis by personnel experienced in the design and construction of engineering works.

Government ordinances and regulations that restrict certain land uses or impose specific design criteria were not considered in preparing the information in this section. Local ordinances and regulations should be considered in planning, in site selection, and in design.

Soil properties, site features, and observed performance were considered in determining the ratings in this section. During the fieldwork for this soil survey, determinations were made about grain-size distribution, liquid limit, plasticity index, soil reaction, soil wetness, depth to a seasonal high water table, slope, likelihood of flooding, natural soil structure aggregation, and soil density. Data were collected about kinds of clay minerals, mineralogy of the sand and silt fractions, and the kinds of adsorbed cations. Estimates were made for erodibility, permeability, corrosivity, shrink-swell potential, available water capacity, and other behavioral characteristics affecting engineering uses.

This information can be used to evaluate the potential of areas for residential, commercial, industrial, and recreational uses; make preliminary estimates of construction conditions; evaluate alternative routes for roads, streets, highways, pipelines, and underground cables; evaluate alternative sites for septic tank absorption fields; plan detailed onsite investigations of soils and geology; locate potential sources of gravel, sand, earthfill, and topsoil; plan drainage systems, irrigation systems, ponds, terraces, and other structures for soil and water conservation; and predict performance of proposed small structures and pavements by comparing the performance of existing similar structures on the same or similar soils.

The information in the tables, along with the soil maps, the soil descriptions, and other data provided in this survey, can be used to make additional interpretations.

Some of the terms used in this soil survey have a special meaning in soil science and are defined in the Glossary.

Building Site Development

Table 8 shows the degree and kind of soil limitations that affect shallow excavations, dwellings with and without basements, small commercial buildings, local roads and streets, and lawns and landscaping. The limitations are considered *slight* if soil properties and site features are generally favorable for the indicated use and limitations are minor and easily overcome; *moderate* if soil properties or site features are somewhat restrictive for the indicated use and special planning, design, or maintenance is needed to overcome or minimize the limitations; and *severe* if soil properties or site features are so unfavorable that special design, soil reclamation, and possibly increased maintenance are required. Special feasibility studies may be required where the soil limitations are severe.

Shallow excavations are trenches or holes dug to a

maximum depth of 5 or 6 feet for basements, graves, utility lines, open ditches, and other purposes. The ratings are based on soil properties, site features, and observed performance of the soils. The ease of digging, filling, and compacting is affected by the depth to a very firm, dense layer; stone content; soil texture; and slope. The time of the year that excavations can be made is affected by the depth to a seasonal high water table and the susceptibility of the soil to flooding. The resistance of the excavation walls or banks to sloughing or caving is affected by soil texture and depth to the water table.

Dwellings and *small commercial buildings* are structures built on shallow foundations on undisturbed soil. The load limit is the same as that for single-family dwellings no higher than three stories. Ratings are made for small commercial buildings without basements, for dwellings with basements, and for dwellings without basements. The ratings are based on soil properties, site features, and observed performance of the soils. A high water table, flooding, shrinking and swelling, and organic layers can cause the movement of footings. Depth to a high water table and flooding affect the ease of excavation and construction. Landscaping and grading that require cuts and fills of more than 5 or 6 feet are not considered.

Local roads and streets have an all-weather surface and carry automobile and light truck traffic all year. They have a subgrade of cut or fill soil material; a base of gravel, crushed rock, or stabilized soil material; and a flexible or rigid surface. Cuts and fills are generally limited to less than 6 feet. The ratings are based on soil properties, site features, and observed performance of the soils. Depth to a high water table, flooding, and slope affect the ease of excavating and grading. Soil strength (as inferred from the engineering classification of the soil), shrink-swell potential, and depth to a high water table affect the traffic-supporting capacity.

Lawns and landscaping require soils on which turf and ornamental trees and shrubs can be established and maintained. The ratings are based on soil properties, site features, and observed performance of the soils. Soil reaction, depth to a high water table, the available water capacity in the upper 40 inches, and the content of salts, sodium, and sulfidic materials affect plant growth. Flooding, wetness, slope, and the amount of sand, clay, or organic matter in the surface layer affect trafficability after vegetation is established.

Sanitary Facilities

Table 9 shows the degree and the kind of soil limitations that affect septic tank absorption fields, sewage lagoons, and sanitary landfills. The limitations are considered *slight* if soil properties and site features are generally favorable for the indicated use and limitations, if any, are minor and easily overcome; *moderate* if soil properties or site features are moderately favorable for the indicated use and special planning, design, or maintenance is needed to overcome or minimize the limitations; and *severe* if one or more soil properties or site features are unfavorable for the use and overcoming the unfavorable properties requires special design, extra maintenance, or alteration.

The table also shows the suitability of the soils for use as daily cover for landfill. A rating of *good* indicates that soil properties and site features are favorable for the use and that good performance and low maintenance can be expected; *fair* indicates that soil properties and site features are moderately favorable for the use and one or more soil properties or site features make the soil less desirable than the soils rated good; and *poor* indicates that one or more soil properties or site features are unfavorable for the use and overcoming the unfavorable properties requires special design, extra maintenance, or costly alteration.

Septic tank absorption fields are areas in which effluent from a septic tank is distributed into the soil through subsurface perforated pipe. Only that part of the soil between depths of 24 and 72 inches is evaluated. The ratings are based on soil properties, site features, and observed performance of the soils. Permeability, depth to a high water table, depth to bedrock or to a cemented pan, and flooding affect absorption of the effluent.

Unsatisfactory performance of septic tank absorption fields, including excessively slow absorption of effluent, surfacing of effluent, and hillside seepage, can affect public health. Ground water can be polluted if highly permeable sand and gravel is less than 4 feet below the base of the absorption field, if slope is excessive, or if the water table is near the surface. There must be unsaturated soil material beneath the absorption field to filter the effluent effectively. State laws require that this material be of a certain thickness.

Sewage lagoons are shallow ponds constructed to hold sewage while aerobic bacteria decompose the solid and liquid wastes. Lagoons should have a nearly level floor surrounded by cut slopes or embankments of compacted soil. Lagoons generally are designed to hold the sewage within a depth of 2 to 5 feet. Nearly impervious soil material for the lagoon floor and sides is required to minimize seepage and contamination of ground water.

The table gives ratings for the natural soil that makes up the lagoon floor. The surface layer and,

generally, 1 or 2 feet of soil material below the surface layer are excavated to provide material for the embankments. The ratings are based on soil properties, site features, and observed performance of the soils. Considered in the ratings are slope, permeability, a high water table, flooding, large stones, and content of organic matter.

Excessive seepage resulting from rapid permeability in the soil or a water table that is high enough to raise the level of sewage in the lagoon causes a lagoon to function unsatisfactorily. Pollution results if seepage is excessive or if floodwater overtops the lagoon. A high content of organic matter is detrimental to proper functioning of the lagoon because it inhibits aerobic activity. Steep slopes can cause construction problems.

Sanitary landfills are areas where solid waste is disposed of by burying it in soil. There are two types of landfill—trench and area. In a trench landfill, the waste is placed in a trench. It is spread, compacted, and covered daily with a thin layer of soil excavated at the site. In an area landfill, the waste is placed in successive layers on the surface of the soil. The waste is spread, compacted, and covered daily with a thin layer of soil from a source away from the site.

Both types of landfill must be able to bear heavy vehicular traffic. Both types involve a risk of ground-water pollution. Ease of excavation and revegetation should be considered.

The ratings in the table are based on soil properties, site features, and observed performance of the soils. Permeability, depth to bedrock or to a cemented pan, depth to a water table, slope, and flooding affect both types of landfill. Texture, highly organic layers, soil reaction, and content of salts and sodium affect trench landfills. Unless otherwise stated, the ratings apply only to that part of the soil within a depth of about 6 feet. For deeper trenches, a limitation rated slight or moderate may not be valid. Onsite investigation is needed.

Daily cover for landfill is the soil material that is used to cover compacted solid waste in an area sanitary landfill. The soil material is obtained offsite, transported to the landfill, and spread over the waste.

Soil texture, wetness, coarse fragments, and slope affect the ease of removing and spreading the material during wet and dry periods. Loamy or silty soils that are free of excess gravel are the best cover for a landfill. Clayey soils are sticky or cloddy and are difficult to spread; sandy soils are subject to soil blowing.

After soil material has been removed, the soil material remaining in the borrow area must be thick enough over the water table to permit revegetation. The soil material used as the final cover for a landfill should be suitable for plants. The surface layer generally has the best workability, more organic matter, and the best potential for plants. Material from the surface layer should be stockpiled for use as the final cover.

Construction Materials

Table 10 gives information about the soils as a source of roadfill, sand, gravel, and topsoil. The soils are rated *good, fair,* or *poor* as a source of roadfill and topsoil. They are rated as a *probable* or *improbable* source of sand and gravel. The ratings are based on soil properties and site features that affect the removal of the soil and its use as construction material. Normal compaction, minor processing, and other standard construction practices are assumed. Each soil is evaluated to a depth of 5 or 6 feet.

Roadfill is soil material that is excavated in one place and used in road embankments in another place. In this table, the soils are rated as a source of roadfill for low embankments, generally less than 6 feet high and less exacting in design than higher embankments.

The ratings are for the soil material below the surface layer to a depth of 5 or 6 feet. It is assumed that soil layers will be mixed during excavating and spreading. Many soils have layers of contrasting suitability within their profile. The table showing engineering index properties provides detailed information about each soil layer. This information can help to determine the suitability of each layer for use as roadfill. The performance of soil after it is stabilized with lime or cement is not considered in the ratings.

The ratings are based on soil properties, site features, and observed performance of the soils. The thickness of suitable material is a major consideration. The ease of excavation is affected by a high water table and slope. How well the soil performs in place after it has been compacted and drained is determined by its strength (as inferred from the engineering classification of the soil) and shrink-swell potential.

Soils rated *good* contain significant amounts of sand or gravel or both. They have at least 5 feet of suitable material, a low shrink-swell potential, and slopes of 15 percent or less. Depth to the water table is more than 3 feet. Soils rated *fair* are more than 35 percent silt- and clay-sized particles and have a plasticity index of less than 10. They have a moderate shrink-swell potential, slopes of 15 to 25 percent, or many stones. Depth to the water table is 1 to 3 feet. Soils rated *poor* have a plasticity index of more than 10, a high shrink-swell potential, many stones, or slopes of more than 25 percent. They are wet and have a water table at a depth of less than 1 foot. They may have layers of

suitable material, but the material is less than 3 feet thick.

Sand and *gravel* are natural aggregates suitable for commercial use with a minimum of processing. They are used in many kinds of construction. Specifications for each use vary widely. In the table, only the probability of finding material in suitable quantity is evaluated. The suitability of the material for specific purposes is not evaluated, nor are factors that affect excavation of the material.

The properties used to evaluate the soil as a source of sand or gravel are gradation of grain sizes (as indicated by the engineering classification of the soil), the thickness of suitable material, and the content of rock fragments. Kinds of rock, acidity, and stratification are given in the soil series descriptions. Gradation of grain sizes is given in the table on engineering index properties.

A soil rated as a probable source has a layer of clean sand or gravel or a layer of sand or gravel that is up to 12 percent silty fines. This material must be at least 3 feet thick and less than 50 percent, by weight, large stones. All other soils are rated as an improbable source.

Topsoil is used to cover an area so that vegetation can be established and maintained. The upper 40 inches of a soil is evaluated for use as topsoil. Also evaluated is the reclamation potential of the borrow area.

Plant growth is affected by toxic material and by such properties as soil reaction, available water capacity, and fertility. The ease of excavating, loading, and spreading is affected by rock fragments, slope, a water table, soil texture, and thickness of suitable material. Reclamation of the borrow area is affected by slope, a water table, rock fragments, and toxic material.

Soils rated *good* have friable, loamy material to a depth of at least 40 inches. They have little or no gravel and have slopes of less than 8 percent. They are low in content of soluble salts, are naturally fertile or respond well to fertilizer, and are not so wet that excavation is difficult.

Soils rated *fair* are sandy soils, loamy soils that have a relatively high content of clay, soils that have only 20 to 40 inches of suitable material, soils that have an appreciable amount of gravel or soluble salts, or soils that have slopes of 8 to 15 percent. The soils are not so wet that excavation is difficult.

Soils rated *poor* are very sandy or clayey, have less than 20 inches of suitable material, have a large amount of gravel or soluble salts, have slopes of more than 15 percent, or have a seasonal high water table at or near the surface.

The surface layer of most soils is generally preferred for topsoil because of its organic matter content. Organic matter greatly increases the absorption and retention of moisture and releases a variety of plant nutrients as it decomposes.

Water Management

Table 11 gives information on the soil properties and site features that affect water management. The degree and kind of soil limitations are given for pond reservoir areas; embankments, dikes, and levees; and aquifer-fed excavated ponds. The limitations are considered *slight* if soil properties and site features are generally favorable for the indicated use and limitations, if any, are minor and are easily overcome; *moderate* if soil properties or site features are somewhat restrictive for the indicated use and special planning, design, or maintenance is needed to overcome or minimize the limitations; and *severe* if soil properties or site features are unfavorable for the use. Special design and possibly increased maintenance or alterations are required.

This table also gives the restrictive features that affect each soil for drainage, irrigation, terraces and diversions, and grassed waterways.

Pond reservoir areas hold water behind a dam or embankment. Soils best suited to this use have low seepage potential in the upper 60 inches. The seepage potential is determined by the permeability of the soil. Excessive slope can affect the storage capacity of the reservoir area.

Embankments, dikes, and levees are raised structures of soil material, generally less than 20 feet high, constructed to impound water or to protect land against overflow. In this table, the soils are rated as a source of material for embankment fill. The ratings apply to the soil material below the surface layer to a depth of about 5 feet. It is assumed that soil layers will be uniformly mixed and compacted during construction.

The ratings do not indicate the ability of the natural soil to support an embankment. Soil properties to a depth greater than the height of the embankment can affect performance and safety of the embankment. Generally, deeper onsite investigation is needed to determine these properties.

Soil material in embankments must be resistant to seepage, piping, and erosion and have favorable compaction characteristics. Unfavorable features include less than 5 feet of suitable material and a high content of organic matter or salts or sodium. A high water table affects the amount of usable material. It also affects trafficability.

Aquifer-fed excavated ponds are pits or dugouts that

extend to a ground-water aquifer or to a depth below a permanent water table. Excluded are ponds that are fed only by surface runoff and embankment ponds that impound water 3 feet or more above the original surface. Excavated ponds are affected by depth to a permanent water table, permeability of the aquifer, and the salinity of the soil.

Drainage is the removal of excess surface and subsurface water from the soil. How easily and effectively the soil is drained depends on layers that affect the rate of water movement; permeability; depth to a high water table or depth of standing water if the soil is subject to ponding; slope; susceptibility to flooding; and subsidence of organic layers. Excavating and grading and the stability of ditchbanks are affected by slope and the hazard of cutbanks caving. The productivity of the soil after drainage is adversely affected by extreme acidity or by toxic substances in the root zone, such as salts, sodium, and sulfur. Availability of drainage outlets is not considered in the ratings.

Irrigation is the controlled application of water to supplement rainfall and support plant growth. The design and management of an irrigation system are affected by depth to the water table, the need for drainage, flooding, available water capacity, intake rate, permeability, erosion hazard, and slope. The performance of a system is affected by the depth of the root zone, the amount of salts or sodium, and soil reaction.

Terraces and diversions are embankments or a combination of channels and ridges constructed across a slope to control erosion and conserve moisture by intercepting runoff. Slope and wetness affect the construction of terraces and diversions. A restricted rooting depth, a severe hazard of wind erosion or water erosion, an excessively coarse texture, and restricted permeability adversely affect maintenance.

Grassed waterways are natural or constructed channels, generally broad and shallow, that conduct surface water to outlets at a nonerosive velocity. Wetness and slope affect the construction of grassed waterways. A hazard of wind erosion, low available water capacity, restricted rooting depth, toxic substances such as salts or sodium, and restricted permeability adversely affect the growth and maintenance of the grass after construction.

Soil Properties

Data relating to soil properties are collected during the course of the soil survey. The data and the estimates of soil and water features, listed in tables, are explained on the following pages.

Soil properties are determined by field examination of the soils and by laboratory index testing of some benchmark soils. Established standard procedures are followed. During the survey, many shallow borings are made and examined to identify and classify the soils and to delineate them on the soil maps. Samples are taken from some typical profiles and tested in the laboratory to determine grain-size distribution, plasticity, and compaction characteristics.

Estimates of soil properties are based on field examinations, on laboratory tests of samples from the survey area, and on laboratory tests of samples of similar soils in nearby areas. Tests verify field observations, verify properties that cannot be estimated accurately by field observation, and help to characterize key soils.

The estimates of soil properties shown in the tables include the range of grain-size distribution and Atterberg limits, the engineering classification, and the physical and chemical properties of the major layers of each soil. Pertinent soil and water features also are given.

Engineering Index Properties

Table 12 gives estimates of the engineering classification and of the range of index properties for the major layers of each soil in the survey area. Most soils have layers of contrasting properties within the upper 5 or 6 feet.

Depth to the upper and lower boundaries of each layer is indicated. The range in depth and information on other properties of each layer are given for each soil series under the heading "Soil Series and Their Morphology."

Texture is given in the standard terms used by the U.S. Department of Agriculture. These terms are defined according to percentages of sand, silt, and clay in the fraction of the soil that is less than 2 millimeters in diameter. "Loam," for example, is soil that is 7 to 27 percent clay, 28 to 50 percent silt, and less than 52 percent sand. If the content of particles coarser than sand is as much as 15 percent, an appropriate modifier is added, for example, "gravelly." Textural terms are defined in the Glossary.

Classification of the soils is determined according to the Unified soil classification system (ASTM, 1993) and the system adopted by the American Association of State Highway and Transportation Officials (AASHTO, 1986).

The Unified system classifies soils according to properties that affect their use as construction material. Soils are classified according to grain-size distribution of the fraction less than 3 inches in diameter and according to plasticity index, liquid limit, and organic matter content. Sandy and gravelly soils are identified as GW, GP, GM, GC, SW, SP, SM, and SC; silty and clayey soils as ML, CL, OL, MH, CH, and OH; and highly organic soils as PT. Soils exhibiting engineering properties of two groups can have a dual classification, for example, SP-SM.

The AASHTO system classifies soils according to those properties that affect roadway construction and maintenance. In this system, the fraction of a mineral soil that is less than 3 inches in diameter is classified in one of seven groups from A-1 through A-7 on the basis of grain-size distribution, liquid limit, and plasticity index. Soils in group A-1 are coarse grained and low in content of fines (silt and clay). At the other extreme, soils in group A-7 are fine grained. Highly organic soils are classified in group A-8 on the basis of visual inspection.

If laboratory data are available, the A-1, A-2, and A-7 groups are further classified as A-1-a, A-1-b, A-2-4, A-2-5, A-2-6, A-2-7, A-7-5, or A-7-6. As an additional refinement, the suitability of a soil as subgrade material can be indicated by a group index number. Group index numbers range from 0 for the best subgrade material to 20, or higher, for the poorest.

Rock fragments 3 to 10 inches in diameter are indicated as a percentage of the total soil on a dry-weight basis. The percentages are estimates determined mainly by converting volume percentage in the field to weight percentage.

Percentage (of soil particles) passing designated sieves is the percentage of the soil fraction less than 3

inches in diameter based on an ovendry weight. The sieves, numbers 4, 10, 40, and 200 (USA Standard Series), have openings of 4.76, 2.00, 0.420, and 0.074 millimeters, respectively. Estimates are based on laboratory tests of soils sampled in the survey area and in nearby areas and on estimates made in the field.

Liquid limit and *plasticity index* (Atterberg limits) indicate the plasticity characteristics of a soil. The estimates are based on test data from the survey area or from nearby areas and on field examination.

Physical and Chemical Properties

Table 13 shows estimates of some characteristics and features that affect soil behavior. These estimates are given for the major layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

Clay as a soil separate, or component, consists of mineral soil particles that are less than 0.002 millimeter in diameter. In this table, the estimated clay content of each major soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The amount and kind of clay greatly affect the fertility and physical condition of the soil. They determine the ability of the soil to adsorb cations and to retain moisture. They influence the shrink-swell potential, permeability, plasticity, the ease of soil dispersion, and other soil properties. The amount and kind of clay in a soil also affect tillage and earthmoving operations.

Moist bulk density is the weight of soil (ovendry) per unit volume. Volume is measured when the soil is at field moisture capacity, that is, the moisture content at $^{1}/_{3}$-bar moisture tension. Weight is determined after drying the soil at 105 degrees C. In this table, the estimated moist bulk density of each major soil horizon is expressed in grams per cubic centimeter of soil material that is less than 2 millimeters in diameter. Bulk density data are used to compute shrink-swell potential, available water capacity, total pore space, and other soil properties. The moist bulk density of a soil indicates the pore space available for water and roots. A bulk density of more than 1.6 can restrict water storage and root penetration. Moist bulk density is influenced by texture, kind of clay, content of organic matter, and soil structure.

Permeability refers to the ability of a soil to transmit water or air. The estimates indicate the rate of movement of water through the soil when the soil is saturated. They are based on soil characteristics observed in the field, particularly structure, porosity, and texture. Permeability is considered in the design of soil drainage systems and septic tank absorption fields.

Available water capacity refers to the quantity of water that the soil is capable of storing for use by plants. The capacity for water storage in each major soil layer is stated in inches of water per inch of soil. The capacity varies, depending on soil properties that affect the retention of water and the depth of the root zone. The most important properties are the content of organic matter, soil texture, bulk density, and soil structure. Available water capacity is an important factor in the choice of plants or crops to be grown and in the design and management of irrigation systems. Available water capacity is not an estimate of the quantity of water actually available to plants at any given time.

Soil reaction is a measure of acidity or alkalinity and is expressed as a range in pH values. The range in pH of each major horizon is based on many field tests. For many soils, values have been verified by laboratory analyses. Soil reaction is important in selecting crops and other plants, in evaluating soil amendments for fertility and stabilization, and in determining the risk of corrosion.

Salinity is a measure of soluble salts in the soil at saturation. It is expressed as the electrical conductivity of the saturation extract, in millimhos per centimeter at 25 degrees C. Estimates are based on field and laboratory measurements at representative sites of nonirrigated soils. The salinity of irrigated soils is affected by the quality of the irrigation water and by the frequency of water application. Hence, the salinity of soils in individual fields can differ greatly from the value given in the table. Salinity affects the suitability of a soil for crop production, the stability of soil if used as construction material, and the potential of the soil to corrode metal and concrete.

Shrink-swell potential is the potential for volume change in a soil with a loss or gain in moisture. Volume change occurs mainly because of the interaction of clay minerals with water and varies with the amount and type of clay minerals in the soil. The size of the load on the soil and the magnitude of the change in soil moisture content influence the amount of swelling of soils in place. Laboratory measurements of swelling of undisturbed clods were made for many soils. For others, swelling was estimated on the basis of the kind and amount of clay minerals in the soil and on measurements of similar soils.

If the shrink-swell potential is rated moderate to very high, shrinking and swelling can cause damage to buildings, roads, and other structures. Special design is often needed.

Shrink-swell potential classes are based on the change in length of an unconfined clod as moisture content is increased from air-dry to field capacity. The classes are *low*, a change of less than 3 percent; *moderate*, 3 to 6 percent; and *high*, more than 6 percent. *Very high*, more than 9 percent, is sometimes used.

Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of six factors used in the Universal Soil Loss Equation (USLE) to predict the average annual rate of soil loss by sheet and rill erosion. Losses are expressed in tons per acre per year. These estimates are based primarily on percentage of silt, sand, and organic matter (up to 4 percent) and on soil structure and permeability. Values of K range from 0.02 to 0.69. The higher the value, the more susceptible the soil is to sheet and rill erosion by water.

Erosion factor T is an estimate of the maximum average annual rate of soil erosion by wind or water that can occur over a sustained period without affecting crop productivity. The rate is expressed in tons per acre per year.

Wind erodibility groups are made up of soils that have similar properties affecting their resistance to wind erosion in cultivated areas. The groups indicate the susceptibility of soil to wind erosion. Soils are grouped according to the following distinctions:

1. Sands, coarse sands, fine sands, and very fine sands. These soils are extremely erodible, and vegetation is often difficult to establish. Crops can be grown if intensive measures to control wind erosion are used.

2. Loamy sands, loamy fine sands, and loamy very fine sands. These soils are very highly erodible. Crops can be grown if intensive measures to control wind erosion are used.

3. Sandy loams, coarse sandy loams, fine sandy loams, and very fine sandy loams. These soils are highly erodible. Crops can be grown if intensive measures to control wind erosion are used.

4L. Calcareous loamy soils that are less than 35 percent clay and more than 5 percent finely divided calcium carbonate. These soils are erodible. Crops can be grown if intensive measures to control wind erosion are used.

4. Clays, silty clays, clay loams, and silty clay loams that are more than 35 percent clay. These soils are moderately erodible. Crops can be grown if measures to control wind erosion are used.

5. Loamy soil that are less than 18 percent clay and more than 5 percent finely divided calcium carbonate and sandy clay loams and sandy clays that are less than 5 percent finely divided calcium carbonate. These soils are slightly erodible. Crops can be grown if measures to control wind erosion are used.

6. Loamy soils that are 18 to 35 percent clay and less than 5 percent finely divided calcium carbonate. These soils are very slightly erodible. Crops can be grown.

7. Silty clay loams that are less than 35 percent clay and less than 5 percent finely divided calcium carbonate. These soils are very slightly erodible. Crops can be grown.

8. Stony or gravelly soils and other soils not subject to wind erosion.

Organic matter is the plant and animal residue in the soil at various stages of decomposition. In the table, the estimated content of organic matter is expressed as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The content of organic matter in a soil can be maintained or increased by returning crop residue to the soil. Organic matter affects the available water capacity, infiltration rate, and tilth. It is a source of nitrogen and other nutrients for crops.

Soil and Water Features

Table 14 gives estimates of various soil and water features. The estimates are used in land use planning that involves engineering considerations.

Hydrologic soil groups are used to estimate runoff from precipitation. Soils are assigned to one of four groups. They are grouped according to the infiltration of water when the soils are thoroughly wet and receive precipitation from long-duration storms.

The four hydrologic soil groups are:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These

consist chiefly of clays that have a high shrink-swell potential, soils that have a permanent high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

Flooding, the temporary covering of the soil surface by flowing water, is caused by overflowing streams, by runoff from adjacent slopes, or by inflow from high tides. Shallow water standing or flowing for short periods after rainfall or snowmelt is not considered flooding. Standing water in swamps and marshes or in a closed depression is considered ponding.

The table gives the frequency and duration of flooding and the time of year when flooding is most likely.

Frequency, duration, and probable dates of occurrence are estimated. Frequency generally is expressed as *none, rare, occasional,* or *frequent. None* means that flooding is not probable. *Rare* means that flooding is unlikely but possible under unusual weather conditions (the chance of flooding is nearly 0 percent to 5 percent in any year). *Occasional* means that flooding occurs infrequently under normal weather conditions (the chance of flooding is 5 to 50 percent in any year). *Frequent* means that flooding occurs often under normal weather conditions (the chance of flooding is more than a 50 percent in any year). *Common* is used when the occasional and frequent classes are grouped for certain purposes. Duration is expressed as *very brief* (less than 2 days), *brief* (2 to 7 days), *long* (7 days to 1 month), and *very long* (more than 1 month). The time of year that floods are most likely to occur is expressed in months. About two-thirds to three-fourths of all flooding occurs during the stated period.

The information on flooding is based on evidence in the soil profile, namely thin strata of gravel, sand, silt, or clay deposited by floodwater; irregular decrease in organic matter content with increasing depth; and little or no horizon development.

Also considered is local information about the extent and levels of flooding and the relation of each soil on the landscape to historic floods. Information on the extent of flooding based on soil data is less specific than that provided by detailed engineering surveys that delineate flood-prone areas at specific flood frequency levels.

High water table (seasonal) is the highest level of a saturated zone in the soil in most years. The estimates are based mainly on the evidence of a saturated zone, namely grayish colors or mottles in the soil. Indicated in the table are the depth to the seasonal high water table; the kind of water table, that is, *perched* or *apparent*; and the months of the year that the water table commonly is highest. A water table that is seasonally high for less than 1 month is not indicated in the table.

An *apparent* water table is a thick zone of free water in the soil. It is indicated by the level at which water stands in an uncased borehole after adequate time is allowed for adjustment in the surrounding soil. A *perched* water table is water standing above an unsaturated zone. In places an upper, or perched, water table is separated from a lower one by a dry zone.

Two numbers in the column showing depth to the water table indicate the normal range in depth to a saturated zone. Depth is given to the nearest half foot. The first numeral in the range indicates the highest water level. A plus sign preceding the range in depth indicates that the water table is above the surface of the soil. “More than 6.0” indicates that the water table is below a depth of 6 feet or that it is within a depth of 6 feet for less than a month.

Depth to bedrock is given if bedrock is within a depth of 5 feet. The depth is based on many soil borings and on observations during soil mapping. The rock is either soft or hard. If the rock is soft or fractured, excavations can be made with trenching machines, backhoes, or small rippers. If the rock is hard or massive, blasting or special equipment generally is needed for excavation.

Subsidence is the settlement of organic soils or of saturated mineral soils of very low density. Subsidence generally results from either desiccation and shrinkage or oxidation of organic material, or both, following drainage. Subsidence takes place gradually, usually over a period of several years. The table shows the expected initial subsidence, which usually is a result of drainage, and total subsidence, which results from a combination of factors.

Risk of corrosion pertains to potential soil-induced electrochemical or chemical action that dissolves or weakens uncoated steel or concrete. The rate of corrosion of uncoated steel is related to such factors as soil moisture, particle-size distribution, acidity, and electrical conductivity of the soil. The rate of corrosion of concrete is based mainly on the sulfate and sodium content, texture, moisture content, and acidity of the soil. Special site examination and design may be needed if the combination of factors results in a severe hazard of corrosion. The steel in installations that intersect soil boundaries or soil layers is more susceptible to corrosion than steel in installations that are entirely within one kind of soil or within one soil layer.

For uncoated steel, the risk of corrosion, expressed

as *low, moderate*, or *high*, is based on soil drainage class, total acidity, electrical resistivity near field capacity, and electrical conductivity of the saturation extract.

For concrete, the risk of corrosion is also expressed as *low, moderate*, or *high*. It is based on soil texture, acidity, and the amount of sulfates in the saturation extract.

Classification of the Soils

The system of soil classification used by the National Cooperative Soil Survey has six categories (USDA, 1975). Beginning with the broadest, these categories are the order, suborder, great group, subgroup, family, and series. Classification is based on soil properties observed in the field or inferred from those observations or on laboratory measurements. Table 15 shows the classification of the soils in the survey area. The categories are defined in the following paragraphs.

ORDER. Twelve soil orders are recognized. The differences among orders reflect the dominant soil-forming processes and the degree of soil formation. Each order is identified by a word ending in *sol*. An example is Entisol.

SUBORDER. Each order is divided into suborders, primarily on the basis of properties that influence soil genesis and are important to plant growth or properties that reflect the most important variables within the orders. The last syllable in the name of a suborder indicates the order. An example is Aquent (*Aqu*, meaning water, plus *ent*, from Entisol).

GREAT GROUP. Each suborder is divided into great groups on the basis of close similarities in kind, arrangement, and degree of development of pedogenic horizons; soil moisture and temperature regimes; and base status. Each great group is identified by the name of a suborder and by a prefix that indicates a property of the soil. An example is Psammaquent (*Psamm*, meaning sandy texture, plus *aquent*, the suborder of the Entisols that has an aquic moisture regime).

SUBGROUP. Each great group has a typic subgroup. Other subgroups are intergrades or extragrades. The typic is the central concept of the great group; it is not necessarily the most extensive. Intergrades are transitions to other orders, suborders, or great groups. Extragrades have some properties that are not representative of the great group but do not indicate transitions to any other known kind of soil. Each subgroup is identified by one or more adjectives preceding the name of the great group. The adjective *Typic* identifies the subgroup that typifies the great group. An example is Typic Psammaquents.

FAMILY. Families are established within a subgroup on the basis of physical and chemical properties and other characteristics that affect management. Generally, the properties are those of horizons below plow depth where there is much biological activity. Among the properties and characteristics considered are particle-size class, mineral content, temperature regime, depth of the root zone, consistence, moisture equivalent, slope, and permanent cracks. A family name consists of the name of a subgroup preceded by terms that indicate soil properties. An example is siliceous, thermic Typic Psammaquents.

SERIES. The series consists of soils that have similar horizons in their profile. The horizons are similar in color, texture, structure, reaction, consistence, mineral and chemical composition, and arrangement in the profile. There can be some variation in the texture of the surface layer or of the substratum within a series. Soils of the Duckston series are siliceous, thermic Typic Psammaquents.

Soil Series and Their Morphology

In this section, each soil series recognized in the survey area is described. The descriptions are arranged in alphabetic order.

Characteristics of the soil and the material in which it formed are identified for each series. The soil is compared with similar soils and with nearby soils of other series. A pedon, a small three-dimensional area of soil, that is typical of the series in the survey area is described. The detailed description of each soil horizon follows standards in the “Soil Survey Manual” (USDA, 1993). Many of the technical terms used in the descriptions are defined in “Soil Taxonomy” (USDA, 1975). Unless otherwise stated, colors in the descriptions are for moist soil. Following the pedon description is the range of important characteristics of the soils in the series.

The map units of each soil series are described in the section “Detailed Soil Map Units.”

Alapaha Series

The Alapaha series consists of very deep, poorly drained soils that formed in sandy and loamy marine sediments. These soils formed on broad flats and on

low knolls on the southern Coastal Plain. Slopes range from 0 to 2 percent. These soils are loamy, siliceous, thermic Arenic Plinthic Paleaquults.

Alapaha soils are closely associated with Albany, Pelham, Plummer, Sapelo, and Stilson soils. The somewhat poorly drained Albany soils are in the higher positions, have sandy surface and subsurface horizons having a combined thickness of more than 40 inches, and have less than 5 percent plinthite in the subsoil. The poorly drained Pelham, Plummer, and Sapelo soils are in landscape positions similar to those of the Alapaha soils and have less than 5 percent plinthite in the subsoil. Plummer and Sapelo soils have an argillic horizon that is at a depth of more than 40 inches. Sapelo soils have a spodic horizon. The moderately well drained Stilson soils are in the higher positions.

Typical pedon of Alapaha loamy fine sand; about 2,300 feet east and 100 feet north of the southwest corner of sec. 12, T. 4 S., R. 11 W.

Ap—0 to 6 inches; black (N 2/0) loamy fine sand; moderate medium granular structure; very friable; strongly acid; clear smooth boundary.

E—6 to 22 inches; dark gray (10YR 4/1) loamy fine sand; single grained; loose; strongly acid; clear wavy boundary.

Btgv—22 to 41 inches; gray (10YR 6/1) and light brownish gray (2.5Y 6/2) fine sandy loam; common medium prominent olive yellow (2.5Y 6/8) mottles; weak medium subangular blocky structure; friable; about 10 percent plinthite; very strongly acid; abrupt irregular boundary.

Btg1—41 to 64 inches; light gray (10YR 7/1) fine sandy loam; common coarse prominent yellowish brown (10YR 5/4) and yellowish red (5YR 5/6) mottles; moderate medium subangular blocky structure; friable; very strongly acid; clear wavy boundary.

Btg2—64 to 80 inches; gray (N 6/0) sandy clay loam; common coarse prominent yellowish red (5YR 5/6) and yellowish brown (10YR 5/4) mottles; weak medium subangular blocky structure; moderately acid.

The solum is more than 80 inches thick. Reaction is very strongly acid or strongly acid throughout the profile, except in areas where the surface layer has been limed.

The A or Ap horizon has hue of 10YR, value of 2 to 4, and chroma of 1; or it is neutral in hue and has value of 2 to 4.

The E horizon has hue of 10YR, value of 4 to 6, and chroma of 1; or it is neutral in hue and has value of 5 or 6. It has few to many mottles in shades of yellow. The texture is loamy fine sand, fine sand, or sand.

The Btg horizon has hue of 10YR or 2.5Y, value of 5 to 7, and chroma of 1 or 2; or it is neutral in hue and has value of 5 to 7. It has few to many mottles in shades of yellow, brown, or red. The texture is fine sandy loam, sandy loam, or sandy clay loam.

The Btv horizon, if it occurs, has hue of 5YR or 7.5YR, value of 4 to 6, and chroma of 4 to 8. It has few to many mottles in shades of gray, yellow, brown, or red; or more commonly, it has no dominant color and is multicolored in shades of red, brown, yellow, and gray. The texture is fine sandy loam, sandy loam, or sandy clay loam. The content of plinthite ranges from 5 to 35 percent.

The Btvg horizon, if it occurs, has the same range in colors and textures as the Btg horizon. The content of plinthite ranges from 5 to 10 percent.

Albany Series

The Albany series consists of very deep, somewhat poorly drained soils that formed in sandy and loamy marine sediments (fig. 10). These soils are on low uplands and on knolls on the southern Coastal Plain. Slopes range from 0 to 2 percent. These soils are loamy, siliceous, thermic Grossarenic Paleudults.

Albany soils are closely associated with Alapaha, Blanton, Leefield, Ortega, Plummer, and Sapelo soils. The somewhat poorly drained Leefield soils are in landscape positions similar to those of the Albany soils and have an argillic horizon at a depth of 20 to 40 inches. The moderately well drained Blanton and Ortega soils are in the higher positions. Ortega soils do not have an argillic horizon. The poorly drained Alapaha, Plummer, and Sapelo soils are in the lower positions. Alapaha soils have more than 5 percent plinthite in the argillic horizon. Sapelo soils have a spodic horizon.

Typical pedon of Albany sand; 500 feet north and 2,450 feet west of the southeast corner of sec. 13, T. 5 S., R. 10 W.

Ap—0 to 7 inches; very dark gray (10YR 3/1) sand; weak fine granular structure; very friable; slightly acid; abrupt wavy boundary.

E1—7 to 24 inches; light yellowish brown (10YR 6/4) loamy sand; weak fine granular structure; very friable; slightly acid; clear wavy boundary.

E2—24 to 41 inches; very pale brown (10YR 7/4) loamy sand; common medium distinct light gray (10YR 7/2) and common medium prominent strong brown (7.5YR 5/6) and brownish yellow (10YR 6/6) mottles; weak fine granular structure; very friable; slightly acid; clear wavy boundary.

Btg1—41 to 59 inches; light gray (10YR 7/2) sandy

loam; common medium prominent brownish yellow (10YR 6/6) and yellowish brown (10YR 5/6) mottles; moderate medium subangular blocky structure; friable; about 2 percent plinthite; strongly acid; gradual wavy boundary.

Btg2—59 to 80 inches; light gray (2.5Y 7/2) sandy clay loam; common medium prominent light olive brown (2.5Y 5/6), light reddish brown (5YR 6/3), and pink (7.5YR 7/4) mottles; moderate medium subangular blocky structure; friable; strongly acid.

The solum is more than 80 inches thick. Reaction ranges from extremely acid to slightly acid in the A and E horizons and from very strongly acid to moderately acid in the Bt and Btg horizons.

The A or Ap horizon has hue of 10YR, value of 3 to 6, and chroma of 1 or 2.

The E horizon has hue of 10YR or 2.5YR, value of 5 to 8, and chroma of 1 to 6. It has few to many mottles in shades of gray, yellow, brown, and red. The texture is sand, fine sand, or loamy sand.

The Bt horizon, if it occurs, has hue of 7.5YR to 2.5Y, value of 4 to 8, and chroma of 6 to 8; or it has no dominant matrix color and is multicolored in shades of red, yellow, brown, and gray. It has common or many mottles in shades of white, gray, yellow, brown, and red. The texture is sandy loam, fine sandy loam, or sandy clay loam.

The Btg horizon has hue of 10YR or 2.5Y, value of 4 to 8, and chroma of 2 or less; or it has no dominant matrix color and is multicolored in shades of gray, red, yellow, and brown. It has common or many mottles in shades of yellow, brown, and red. The texture is sandy loam, fine sandy loam, or sandy clay loam.

Bayboro Series

The Bayboro series consists of very deep, very poorly drained soils that formed in clayey sediments on the southern Coastal Plain. These soils are in depressions and poorly defined drainageways. Slopes are 0 to 1 percent. These soils are clayey, mixed, thermic Umbric Paleaquults.

Bayboro soils are closely associated with Bladen, Croatan, Pantego, and Surrency soils. The very poorly drained Croatan, Pantego, and Surrency soils are in landscape positions similar to those of the Bayboro soils. Croatan soils are organic. Surrency and Pantego soils have less than 35 percent clay in the control section. The poorly drained Bladen soils are in the higher positions.

Typical pedon of Bayboro fine sandy loam in an area of Pantego and Bayboro soils, depressional; west of the Chipola River, about 2,000 feet west and 1,000 feet north of the southeast corner of sec. 30, T. 5 S., R. 9 W.

A1—0 to 6 inches; very dark gray (10YR 3/1) fine sandy loam; moderate medium granular structure; friable; very strongly acid; clear smooth boundary.

A2—6 to 10 inches; very dark grayish brown (10YR 3/2) fine sandy loam; weak medium subangular blocky structure; friable; very strongly acid; gradual wavy boundary.

Eg—10 to 18 inches; light brownish gray (10YR 6/2) and gray (10YR 5/1) fine sandy loam; weak medium subangular blocky structure; friable; very strongly acid; gradual smooth boundary.

Btg1—18 to 44 inches; gray (5Y 5/1) clay loam; weak medium subangular blocky structure; firm; strongly acid; gradual smooth boundary.

Btg2—44 to 80 inches; gray (N 6/0) clay that has light gray (5Y 7/1) streaks; weak coarse subangular blocky structure; firm; strongly acid.

The solum is more than 60 inches thick. Reaction ranges from extremely acid to strongly acid in the A horizon and is very strongly acid or strongly acid in the Btg horizon.

The A or Ap horizon has hue of 10YR, value of 2 or 3, and chroma of 1 or 2. The texture is sandy loam, fine sandy loam, or clay loam.

The Eg horizon, if it occurs, has hue of 10YR or 2.5Y, value of 4 to 6, and chroma of 1 or 2. The texture is sandy loam or fine sandy loam.

The Btg horizon has hue of 10YR to 5Y, value of 4 to 6, and chroma of 1 or 2; or it is neutral in hue and has value of 4 to 6. The texture is clay loam, sandy clay, or clay.

The Cg horizons, if it occurs, has colors similar to those of the Btg horizon. In some pedons it is stratified with clayey, loamy, or sandy sediments.

Bayvi Series

The Bayvi series consists of very deep, very poorly drained soils that formed in marine sediments. These soils are in tidal marshes along the gulf coast. Slopes are 0 to 1 percent. These soils are sandy, siliceous, thermic Cumulic Haplaquolls.

Bayvi soils are closely associated with Dirego, Duckston, and Rutlege soils. The very poorly drained Dirego soils are in landscape positions similar to those of the Bayvi soils and have a thick organic surface layer. The poorly drained Duckston soils are in the highest positions and have a thinner A horizon than that of the Bayvi soils. The very poorly drained Rutlege soils are in the slightly higher positions outside the tidal marshes and have a base saturation of less than 35 percent.

Typical pedon of Bayvi fine sand in an area of Bayvi and Dirego soils, frequently flooded; in a tidal marsh, about 50 feet west and 2,100 feet north of the southeast corner of sec. 23, T. 8 S., R. 11 W.

A1—0 to 11 inches; very dark brown (10YR 2/2) fine sand; massive; very friable; neutral; clear smooth boundary.
A2—11 to 26 inches; very dark grayish brown (10YR 3/2) fine sand; single grained; loose; neutral; clear smooth boundary.
Cg1—26 to 37 inches; dark gray (10YR 4/1) fine sand that has patches of light brownish gray (10YR 6/2); single grained; loose; slightly alkaline; clear smooth boundary.
Cg2—37 to 80 inches; light brownish gray (10YR 6/2) fine sand; single grained; loose; slightly alkaline.

Reaction ranges from slightly acid to moderately alkaline when the soils are wet and is very strongly acid or extremely acid when the soils are dry. Some pedons have a thin Oa horizon.

The A horizon has hue of 10YR or 2.5Y, value of 2 or 3, and chroma of 1 or 2. The texture is sand, fine sand, mucky fine sand, mucky loamy sand, or mucky sand.

The Cg horizon has hue of 10YR to 5Y, value of 4 to 7, and chroma of 1 or 2. The texture is sand, fine sand, or loamy sand.

Bladen Series

The Bladen series consists of very deep, poorly drained soils that formed in thick beds of acid, loamy and clayey marine sediments. These soils are on fluvial or marine terraces on the Coastal Plain. They are in slight depressions or on low, broad flats. Slopes range from 0 to 2 percent. These soils are clayey, mixed, thermic Typic Albaquults.

Bladen soils are closely associated with Bayboro, Eulonia, Pantego, Rains, and Wahee soils. The moderately well drained Eulonia soils are in the higher positions and have an argillic horizon at a depth of 20 to 40 inches. The somewhat poorly drained Wahee soils are in the higher positions. The poorly drained Rains soils are in landscape positions similar to those of the Bladen soils and have less than 35 percent clay in the subsoil. The very poorly drained Bayboro and Pantego soils are in the lower positions. Pantego soils have less than 35 percent clay in the subsoil.

Typical pedon of Bladen fine sandy loam; on a broad flat west of the Dead Lakes, about 500 feet west and 400 feet south of the northeast corner of sec. 12, T. 4 S., R. 10 W.

A—0 to 5 inches; very dark grayish brown (10YR 3/2) fine sandy loam; few prominent brownish yellow (10YR 6/6) pore linings along 1-millimeter-diameter root channels; moderate medium granular structure; friable; very strongly acid; clear smooth boundary.
Eg—5 to 18 inches; light brownish gray (10YR 6/2) fine sandy loam; few prominent brownish yellow (10YR 6/6) pore linings along 1-millimeter-diameter root channels; weak medium subangular blocky structure; friable; very strongly acid; abrupt smooth boundary.
Btg1—18 to 28 inches; gray (10YR 5/1) clay loam; common fine and medium prominent red (2.5YR 5/6) and brownish yellow (10YR 6/6) mottles; moderate medium subangular blocky structure; friable; very strongly acid; clear smooth boundary.
Btg2—28 to 50 inches; gray (N 5/0) clay loam; common coarse prominent yellowish brown (10YR 5/6) and common medium prominent brown (7.5YR 5/4) mottles; moderate medium subangular blocky structure; friable; very strongly acid; clear smooth boundary.
Btg3—50 to 80 inches; light gray (10YR 7/1) clay; common medium prominent brownish yellow (10YR 6/6) mottles; weak medium subangular structure; firm; very strongly acid.

The solum is more than 60 inches thick. Reaction ranges from extremely acid to strongly acid, except where the surface layer has been limed.

The A horizon has hue of 10YR to 5Y, value of 2 to 5, and chroma of 2; or it is neutral in hue and has value of 2 to 5. The number of pore linings in shades of yellow along root channels ranges from none to common.

The Eg and Btg horizons have hue of 10YR to 5Y, value of 4 to 6, and chroma of 1 or 2; or they are neutral in hue and have value of 4 to 6. The texture of the Eg horizon is fine sandy loam, loam, or sandy loam. The texture of the Btg horizon is clay loam, sandy clay loam, or clay.

The BCg horizon, if it occurs, has colors and textures similar to those of the Btg horizon. In some pedons the BCg horizon has thin strata of coarser material.

Blanton Series

The Blanton series consists of very deep, moderately well drained soils that formed in sandy and loamy marine sediments (fig. 11). These soils are on uplands. Slopes range from 0 to 5 percent. These soils are loamy, siliceous, thermic Grossarenic Paleudults.

Blanton soils are closely associated with Albany, Fuquay, Leefield, Ortega, and Stilson soils. The moderately well drained Stilson and Ortega soils are in

landscape positions similar to those of the Blanton soils. Stilson soils have an argillic horizon containing plinthite at a depth of 20 to 40 inches. Ortega soils do not have an argillic horizon. The well drained Fuquay soils are in the higher landscape positions and have an argillic horizon containing plinthite at a depth of 20 to 40 inches. The somewhat poorly drained Albany and Leefield soils are in the lower landscape positions. Leefield soils have an argillic horizon containing plinthite at a depth of 20 to 40 inches.

Typical pedon of Blanton sand, 0 to 5 percent slopes; in a pine plantation, about 500 feet north and 250 feet east of the southwest corner of sec. 13, T. 4 S., R. 11 W.

A—0 to 7 inches; dark grayish brown (10YR 4/2) sand; weak fine granular structure; very friable; moderately acid; clear wavy boundary.
E1—7 to 26 inches; light yellowish brown (10YR 6/4) sand; single grained; loose; moderately acid; gradual wavy boundary.
E2—26 to 60 inches; very pale brown (10YR 7/4) sand; single grained; loose; moderately acid; clear wavy boundary.
Bt—60 to 72 inches; brownish yellow (10YR 6/6) loamy sand that has pockets of sandy loam; common medium prominent strong brown (7.5YR 5/8), light yellowish brown (10YR 6/4), and very pale brown (10YR 7/3) mottles; weak medium subangular blocky structure; friable; strongly acid; clear wavy boundary.
Btg—72 to 80 inches; light gray (10YR 7/1) sandy loam; many medium and coarse prominent strong brown (7.5YR 5/8) mottles; moderate medium subangular blocky structure; friable; strongly acid.

The solum is more than 80 inches thick. Generally, reaction ranges from very strongly acid to moderately acid in the A and E horizons and is very strongly acid or strongly acid in the Bt and Btg horizons. Reaction may be higher where the A horizon has been limed.

The A horizon has hue of 2.5Y or 10YR, value of 4 to 6, and chroma of 1 to 3.

The E horizon has hue of 7.5YR to 2.5Y, value of 6 to 8, and chroma of 1 to 6. The material that has chroma of 2 or less generally is in the lower part of the horizon. The horizon has mottles in shades of brown, yellow, or gray. The texture is sand, fine sand, loamy fine sand, or loamy sand.

The Bt horizon has hue of 7.5YR to 2.5Y, value of 5 to 7, and chroma of 3 to 8. It has mottles in shades of brown, yellow, red, and gray. The texture is loamy sand, sandy loam, fine sandy loam, or sandy clay loam.

The Btg horizon, if it occurs, has hue of 10YR, value of 6 or 7, and chroma of 1 or 2. It has mottles in shades of brown or yellow. It has textures similar to those of the Bt horizon.

Brickyard Series

The Brickyard series consists of very poorly drained, nearly level soils that formed in loamy alluvial sediments. These soils are on flood plains along the Apalachicola River and its distributaries and are frequently flooded. Slopes generally are less than 1 percent. These soils are fine, montmorillonitic, nonacid, thermic Aeric Fluvaquents.

Brickyard soils are closely associated with Chowan, Kenner, Mantachie, Maurepas, Meggett, Ochlockonee, and Wahee soils. The very poorly drained Chowan, Kenner, and Maurepas soils are in the slightly lower landscape positions. Kenner soils are organic soils that have mineral strata, and Chowan soils have mineral strata over organic material. Maurepas soils are organic soils. The poorly drained Meggett soils are in the slightly higher landscape positions. The somewhat poorly drained Mantachie and Wahee soils are in the higher landscape positions. The well drained Ochlockonee soils are in the much higher landscape positions on sandy natural levees along the Apalachicola River.

Typical pedon of Brickyard silty clay, frequently flooded; on the flood plain along the Apalachicola River, about 600 feet east and 2,000 feet south of the northwest corner of sec. 31, T. 4 S., R. 9 W.

A—0 to 4 inches; dark grayish brown (10YR 4/2) and brown (10YR 4/3) silty clay; moderate fine granular structure; friable; common flakes of mica; moderately acid; clear smooth boundary.
Bwg1—4 to 10 inches; grayish brown (2.5Y 5/2) clay; many coarse prominent dark brown (7.5YR 4/4) and strong brown (7.5YR 5/6) mottles; weak fine subangular blocky structure; firm; moderately acid; common flakes of mica; clear smooth boundary.
Bwg2—10 to 22 inches; light brownish gray (2.5Y 6/2) clay; many coarse prominent dark brown (7.5YR 4/4) and strong brown (7.5 5/6) mottles; weak fine subangular blocky structure; firm; moderately acid; common flakes of mica; gradual smooth boundary.
Cg1—22 to 35 inches; grayish brown (2.5Y 5/2) clay; many fine and medium prominent yellowish red (5YR 4/6), gray (5Y 6/1), and dark brown (7.5YR 4/4) mottles; massive; moderately acid; common flakes of mica; gradual smooth boundary.
Cg2—35 to 80 inches; gray (N 5/0) clay; massive; firm; moderately acid; few flakes of mica.

The thickness of the solum ranges from 15 to 32 inches. Reaction ranges from moderately acid to neutral in the surface layer and from moderately acid to moderately alkaline in the Bwg and Cg horizons. These soils commonly contain few to many flakes of mica.

The A horizon has hue of 10YR or 2.5Y, value of 3 to 5, and chroma of 2. The texture is silty clay or silt loam.

The Bwg horizon has hue of 2.5Y to 7.5YR, value of 4 to 6, and chroma of 1 to 4. In some pedons it has mottles in shades of brown. The texture is silty clay or clay.

The Cg horizon has hue of 10YR to 5Y, value of 4 to 6, and chroma of 2; or it is neutral in hue and has value of 4 to 6. The texture is silty clay or clay. In some pedons it has strata of loamy sand to sandy clay below a depth of 60 inches.

Chowan Series

The Chowan series consists of very poorly drained, nearly level soils that formed in loamy alluvium and in organic material. These soils are on the flood plain along the Apalachicola River and its distributaries and are frequently flooded. Slopes generally are less than 1 percent. These soils are fine-silty, mixed, nonacid, thermic, Thapto-Histic Fluvaquents.

Chowan soils are closely associated with Brickyard, Kenner, Mantachie, Maurepas, and Meggett soils. The very poorly drained Brickyard soils are in the slightly higher landscape positions and do not have organic strata. The very poorly drained Kenner and Maurepas soils are in landscape positions similar to those of the Chowan soils and are organic soils. Also, Kenner soils have mineral strata. The poorly drained Meggett soils are in the higher landscape positions, do not have organic strata, and have an argillic horizon within a depth of 20 inches. The somewhat poorly drained Mantachie soils are in the highest landscape positions and do not have organic strata.

Typical pedon of Chowan silt loam in an area of Brickyard, Chowan, and Kenner soils, frequently flooded; about 1,400 feet east and 2,200 feet north of the southwest corner of sec. 17, T. 5 S., R. 9 W.

A—0 to 8 inches; very dark grayish brown (10YR 3/2) silt loam; weak medium granular structure; slightly sticky; very strongly acid; clear wavy boundary.

Cg1—8 to 17 inches; dark grayish brown (2.5Y 4/2) loam; massive; slightly sticky; strongly acid; gradual wavy boundary.

Cg2—17 to 38 inches; gray (5Y 5/1) silty clay loam; massive; sticky; strongly acid; gradual wavy boundary.

2Oa—38 to 80 inches; very dark grayish brown (10YR 3/2) muck; massive; very strongly acid.

The combined thickness of the surface mineral horizons ranges from 16 to 40 inches. The thickness of the underlying organic horizon ranges from 16 to more than 80 inches. Reaction ranges from extremely acid to moderately acid in the mineral horizons and is extremely acid or very strongly acid in the organic horizon.

The A horizon has hue of 10YR or 2.5Y, value of 2 to 4, and chroma of 1 or 2. The texture is loam, silt loam, or silty clay loam.

The Cg horizon has hue of 10YR to 5Y, value of 3 to 5, and chroma of 1 or 2. The texture is loam, silt loam, or silty clay loam.

The 2Oa horizon has hue of 10YR or 2.5Y, value of 2 or 3, and chroma of 1 or 2.

Clarendon Series

The Clarendon series consists of somewhat poorly drained, nearly level to gently sloping soils that formed in loamy marine sediments (fig. 12). These soils are on low uplands. They are fine-loamy, siliceous, thermic Plinthaquic Paleudults.

Clarendon soils are closely associated with Dothan, Fuquay, Stilson, and Wahee soils. The somewhat poorly drained Wahee soils are in landscape positions similar to those of Clarendon soils, do not contain plinthite, and are more than 35 percent clay. The moderately well drained Stilson soils are in the higher landscape positions and have an argillic horizon at a depth of 20 to 40 inches. The well drained Dothan and Fuquay soils are in the highest landscape positions. Fuquay soils have an argillic horizon at a depth of 20 to 40 inches.

Typical pedon of Clarendon loamy fine sand, 2 to 5 percent slopes; about 1,400 feet south and 2,200 feet west of the northeast corner of sec. 9, T. 5 S., R. 10 W.

A—0 to 6 inches; very dark gray (10YR 3/1) loamy fine sand; weak fine granular structure; few ironstone nodules on the surface; strongly acid; abrupt wavy boundary.

E—6 to 10 inches; grayish brown (2.5Y 5/2) loamy fine sand; single grained; loose; strongly acid; clear smooth boundary.

BE—10 to 25 inches; light yellowish brown (2.5Y 6/4) fine sandy loam; few medium faint pale yellow (2.5Y 7/4) mottles; single grained; loose; about 5 percent ironstone nodules; strongly acid; clear smooth boundary.

Bt—25 to 31 inches; light yellowish brown (10YR 6/4) fine sandy loam; common medium distinct light

gray (10YR 7/2) and brownish yellow (10YR 6/6) mottles; moderate medium subangular blocky structure; friable; 3 to 5 percent ironstone nodules and 2 to 4 percent plinthite; strongly acid; clear wavy boundary.

Btv1—31 to 50 inches; very pale brown (10YR 7/3) sandy clay loam; common medium prominent light olive brown (7.5YR 5/8) and many coarse distinct light gray (2.5Y 7/2) mottles; moderate medium subangular blocky structure; friable; 3 to 5 percent ironstone nodules and 10 to 15 percent plinthite; strongly acid; clear wavy boundary.

Btv2—50 to 62 inches; mottled yellow (10YR 7/6), light gray (10YR 7/1), yellowish red (5YR 5/8), red (5R 4/6), and olive yellow (2.5Y 6/8) sandy clay loam; moderate medium subangular blocky structure; friable; 5 to 10 percent plinthite; very strongly acid; clear wavy boundary.

BC—62 to 80 inches; mottled light gray (10YR 7/1), yellowish brown (10YR 5/8), red (10YR 4/8), and reddish brown (2.5YR 5/4) sandy clay; weak medium subangular blocky structure; friable; very strongly acid.

The thickness of the solum ranges from 60 to more than 80 inches. Reaction generally ranges from very strongly acid to slightly acid in the A horizon and from extremely acid to strongly acid throughout the rest of the profile. Reaction may be higher where the A horizon has been limed.

The A horizon has hue of 10YR, value of 3 or 4, and chroma of 1 or 2. The texture is fine sand or loamy fine sand.

The E and BE horizons, if they occur, have hue of 10YR or 2.5Y, value of 4 to 6, and chroma of 2 to 6. The texture is fine sand, loamy fine sand, or fine sandy loam.

The Bt and Btv horizons have hue of 10YR, value of 5 to 7, and chroma of 4 to 8. The Bt and Btv horizons have mottles that have chroma of 2 or less in shades of brown or red within a depth of 30 inches. In some pedons, the Btv horizon is mottled in shades of gray, yellow, brown, or red. The texture of the Bt and Btv horizons is dominantly sandy clay loam. In some pedons it is sandy loam or sandy clay.

The BC horizon, if it occurs, has colors similar to those of the Bt and Btv horizons. The texture is sandy clay, sandy clay loam, or sandy loam.

Corolla Series

The Corolla series consists of somewhat poorly drained to moderately well drained, gently undulating soils that formed in sandy marine and eolian deposits (fig. 13). These soils are on coastal dunes, in swales, and on flats. Slopes range from 0 to 5 percent. These soils are thermic, uncoated Aquic Quartzipsamments.

Corolla soils are closely associated with Duckston, Kureb, Newhan, and Resota soils. The poorly drained Duckston soils are in the lower landscape positions. The moderately well drained Resota soils are in the slightly higher landscape positions and have a B horizon. The excessively drained Newhan and Kureb soils are in the higher landscape positions. Also, Kureb soils have a B horizon.

Typical pedon of Corolla fine sand, 1 to 5 percent slopes; at Cape San Blas, about 1,100 feet west and 2,800 feet south of the northeast corner of sec. 29, T. 9 S., R. 11 W.

A—0 to 4 inches; very pale brown (10YR 7/3) fine sand; single grained; loose; moderately acid; clear smooth boundary.

C—4 to 24 inches; very pale brown (10YR 8/3) fine sand; single grained; loose; moderately acid; clear smooth boundary.

Ab—24 to 29 inches; light gray (10YR 6/1) fine sand that has black (10YR 2/1) pockets and streaks; single grained; loose; common distinct undecomposed plant materials; slightly acid; clear wavy boundary.

C´1—29 to 39 inches; white (10YR 8/1) fine sand; single grained; loose; slightly acid; clear smooth boundary.

C´2—39 to 45 inches; white (10YR 8/1) fine sand; common medium prominent yellowish brown (10YR 5/6) and dark yellowish brown (10YR 4/6) mottles; single grained; loose; slightly acid; gradual wavy boundary.

A´b—45 to 52 inches; very dark gray (10YR 3/1) fine sand; single grained; loose; moderate medium subangular blocky structure; very friable; few faint undecomposed plant materials; moderately acid; abrupt wavy boundary.

Cg1—52 to 62 inches; light gray (10YR 7/2) sand that has black (10YR 2/1) pockets and streaks; single grained; loose; moderately acid; clear smooth boundary.

Cg2—62 to 80 inches; gray (5Y 6/1) sand; single grained; loose; moderately acid.

The combined thickness of the A and C horizons is more than 72 inches. Reaction ranges from moderately acid to slightly alkaline. In some pedons the soils contain small, calcareous shell fragments. The soils contain few to many grains of black and dark brown heavy minerals.

The A horizon has hue of 10YR or 2.5Y, value of 3 to 8, and chroma of 3 or less; or it is neutral in hue and has value of 3 to 8. The texture is fine sand or sand.

The Ab or A´b horizon, if it occurs, is at a depth of 24 to 72 inches. It has colors and textures similar to those of the A horizon. It has few or common undecomposed pieces of plant material.

The upper C horizon has hue of 10YR, value of 4 to 8, and chroma of 3 or 4. The lower C horizon has hue of 10YR to 5Y, value of 4 to 7, and chroma of 2; or it is neutral in hue and has value of 4 to 7. Some pedons have a Cg horizon, which has the same colors and textures as the C horizon.

Croatan Series

The Croatan series consists of very poorly drained, nearly level soils that formed in decaying plant remains over marine or alluvial sediments. These soils are in depressions and on flood plains. Slopes generally are less than 1 percent. These soils are loamy, siliceous, dysic, thermic Terric Medisaprists.

Croatan soils are closely associated with Bayboro, Dorovan, Pantego, Rutlege, and Surrency soils. The very poorly drained Dorovan soils are in landscape positions similar to those of the Croatan soils and have an organic surface layer that is more than 51 inches thick. The very poorly drained Bayboro, Pantego, Rutlege, and Surrency soils are in landscape positions that are similar to those of the Croatan soils or slightly higher and do not have an organic surface layer.

Typical pedon of Croatan muck in an area of Dorovan-Croatan complex, depressional; southwest of Wewahitchka, about 800 feet east and 1,700 feet north of the southwest corner of sec. 1, T. 5 S., R. 10 W.

Oa1—0 to 21 inches; dark brown (7.5YR 3/2) muck; about 15 percent fiber unrubbed, 8 percent rubbed; weak medium granular structure; slightly sticky; extremely acid; clear wavy boundary.

Oa2—21 to 36 inches; very dark brown (10YR 2/2) muck; about 15 percent fiber unrubbed, 8 percent rubbed; weak medium granular structure; slightly sticky; extremely acid; clear wavy boundary.

Oa3—36 to 42 inches; very dark grayish brown (10YR 3/2) muck containing decaying woody debris; massive; sticky; extremely acid; clear wavy boundary.

Ag—42 to 46 inches; very dark grayish brown (10YR 3/2) mucky sandy loam containing decaying woody debris; massive; sticky; extremely acid; clear wavy boundary.

Cg1—46 to 65 inches; grayish brown (2.5Y 5/2) sandy clay loam; massive; sticky; extremely acid; clear wavy boundary.

Cg2—65 to 80 inches; gray (5Y 5/1) clay loam; massive; sticky; very strongly acid.

The thickness of the organic material ranges from 16 to 51 inches. Reaction is extremely acid in the organic material and ranges from extremely acid to slightly acid in the mineral material. Decaying woody debris is common in the organic material and in the upper part of the substratum. The content of fiber in the organic layers ranges from 3 to 30 percent unrubbed and is less than 10 percent rubbed.

The Oa horizon has hue of 7.5YR or 10YR, value of 2 or 3, and chroma of 2; or it is neutral in hue and has value of 2 or 3.

The Ag horizon has hue of 5YR to 5Y, value of 2 to 7, and chroma of 1 to 3. The texture is mucky sandy loam, mucky fine sandy loam, sandy loam, or fine sandy loam.

The Cg horizon has hue of 5YR to 5Y, value of 4 to 7, and chroma of 1 or 2; or it has hue of 5GY to 5G, value of 4 to 7, and chroma of 1. The texture is variable and ranges from sand to clay.

Dirego Series

The Dirego series consists of very poorly drained, nearly level soils that formed in decaying plant material overlying stratified sandy marine and alluvial sediments. These soils are in coastal and estuarine tidal marshes and are flooded daily by normal high tides. Slopes are 0 to 1 percent. These soils are sandy or sandy-skeletal, siliceous, euic, thermic Terric Sulfisaprists.

Dirego soils are closely associated with Bayvi, Duckston, and Rutlege soils. The very poorly drained Bayvi soils are in landscape positions similar to those of the Dirego soils and do not have an organic surface layer. The very poorly drained Rutlege soils are in the slightly higher landscape positions outside the tidal marshes and do not have an organic surface layer. The poorly drained Duckston soils are in the highest landscape positions, are outside the tidal marshes, and are sandy throughout.

Typical pedon of Dirego muck in an area of Bayvi and Dirego soils, frequently flooded; 3,500 feet north and 50 feet east of the southwest corner of sec. 17, T. 9 S., R. 11 W.

Oe—0 to 2 inches; very dark grayish brown (10YR 3/2) muck; massive; sticky; neutral; abrupt smooth boundary.

Oa—2 to 19 inches; very dark brown (10YR 2/2) muck; massive; sticky; neutral; clear smooth boundary.

Cg1—19 to 36 inches; dark brown (10YR 3/3) mucky

sand; massive; slightly sticky; slightly acid; abrupt smooth boundary.

Cg2—36 to 80 inches; grayish brown (10YR 5/2) sand with pockets of very dark grayish brown (10YR 3/2) mucky sand; single grained; loose; slightly acid.

The organic material is predominantly sapric, and the content of sulfur ranges from 0.75 percent to 5.5 percent. The O horizon is neutral when moist and is extremely acid when dry. The Cg horizon is moderately acid or slightly acid.

The O horizon has hue of 7.5YR or 10YR, value of 2 or 3, and chroma of 2.

The Cg horizon has hue of 10YR to 5Y, value of 3 to 5, and chroma of 1 to 3. The texture is dominantly sand, fine sand, loamy fine sand, or mucky sand. In some pedons, however, it is fine sandy loam.

Dorovan Series

The Dorovan series consists of very poorly drained, nearly level soils that formed in well decomposed plant materials. These soils are in depressions. Slopes are less than 1 percent. These soils are dysic, thermic Typic Medisaprists.

Dorovan soils are closely associated with Croatan, Leon, Pamlico, Pickney, Rutlege, and Scranton soils. The very poorly drained Pamlico and Croatan soils are in landscape positions similar to those of the Dorovan soils and have a surface layer of muck that ranges from 16 to 50 inches in thickness. The very poorly rained Pickney and Rutlege soils are in the slightly higher landscape positions and are sandy throughout. The poorly drained Leon and Scranton soils are in the higher landscape positions. Leon soils have a spodic horizon within a depth of 30 inches. Scranton soils are sandy throughout.

Typical pedon of Dorovan mucky peat, in an area of Dorovan-Croatan complex, depressional; about 400 feet east and 400 feet south of the northwest corner of sec. 14, T. 6 S., R. 9 W.

Oe—0 to 2 inches; very dark brown (7.5YR 2/2) mucky peat; 20 percent fiber after rubbing; weak fine granular structure; extremely acid; clear smooth boundary.

Oa1—2 to 18 inches; black (10YR 2/1) muck; 5 percent fiber after rubbing; massive; extremely acid; gradual wavy boundary.

Oa2—18 to 54 inches; very dark gray (10YR 3/1) muck; almost no fiber after rubbing; massive; extremely acid; clear wavy boundary.

Cg—54 to 80 inches; gray (10YR 5/1) sand; single grained; loose; very strongly acid.

The thickness of the organic material ranges from 51 to more than 80 inches.

The Oe horizon, if it occurs, has hue of 7.5YR or 10YR, value of 2 or 3, and chroma of 1 or 2. The content of fiber ranges from 40 to 90 percent unrubbed and from 20 to 60 percent rubbed.

The Oa horizon has hue of 10YR to 5YR, value of 2 or 3, and chroma of 1 or 2. The content of fiber ranges from 10 to 40 percent unrubbed. Fiber is less than $^{1}/_{6}$ of the volume of the horizon when rubbed.

The Cg horizon has hue of 10YR, value of 2 to 5, and chroma of 1 or 2. The texture is sand or fine sand.

Dothan Series

The Dothan series consists of well drained, nearly level to sloping soils that formed in sandy and loamy marine sediments (fig. 14). These soils are on uplands. Slopes range from 0 to 8 percent. These soils are fine-loamy, siliceous, thermic Plinthic Kandiudults.

Dothan soils are closely associated with Clarendon, Fuquay, Lucy, and Stilson soils. The well drained Fuquay and Lucy soils are in landscape positions similar to those of the Dothan soils and have an argillic horizon at a depth of 20 to 40 inches. Lucy soils have less than 5 percent plinthite. The moderately well drained Stilson soils are in the lower landscape positions and have an argillic horizon at a depth of 20 to 40 inches. The somewhat poorly drained Clarendon soils are in the much lower landscape positions and have an argillic horizon within a depth of 20 inches.

Typical pedon of Dothan loamy sand in an area of Dothan-Fuquay complex, 5 to 8 percent slopes; near Wewahitchka, about 2,000 feet north and 2,500 feet west of the southeast corner of sec. 24, T. 4 S., R. 10 W.

A—0 to 9 inches; dark grayish brown (10YR 4/2) loamy sand; weak fine granular structure; very friable; about 5 percent ironstone nodules; strongly acid; abrupt wavy boundary.

E—9 to 16 inches; light yellowish brown (10YR 6/4) loamy sand; weak fine subangular blocky structure; friable; about 3 percent ironstone nodules and 4 percent plinthite; strongly acid; clear wavy boundary.

Btv1—16 to 33 inches; yellowish brown (10YR 5/6) fine sandy loam; moderate medium subangular blocky structure; friable; about 12 percent ironstone nodules and 10 percent plinthite; very strongly acid; abrupt wavy boundary.

Btv2—33 to 62 inches; sandy clay loam reticulately mottled in shades of gray, brown, yellow, and red; moderate medium subangular blocky structure; about 5 percent plinthite; friable; very strongly acid; gradual irregular boundary.

BC—62 to 80 inches; sandy clay loam reticulately mottled in shades of gray, brown, yellow, and red; weak medium subangular blocky structure; friable; strongly acid.

The thickness of the solum ranges from 60 to more than 80 inches. The depth to a horizon containing 5 percent or more plinthite ranges from 15 to 60 inches. Reaction ranges from very strongly acid to moderately acid throughout, except where the A horizon has been limed.

The A horizon has hue of 10YR, value of 4 to 7, and chroma of 2 to 4.

The E horizon, if it occurs, has hue of 10YR, value of 5 or 6, and chroma of 4. The texture is sandy loam, fine sandy loam, loamy fine sand, or loamy sand.

The Bt and Btv horizons have hue of 7.5YR to 2.5Y, value of 5 to 8, and chroma of 6 to 8. They have few to many mottles in shades of brown and red and have gray mottles below a depth of 36 inches. In some pedons the lower part is reticulately mottled in shades of brown, red, and gray and does not have a dominant matrix color. The texture is dominantly sandy loam, fine sandy loam, or sandy clay loam. In some pedons the lower part is sandy clay. The Bt and Btv horizons have 5 to 35 percent plinthite. The content of ironstone nodules ranges from 0 to 15 percent.

The BC horizon, if it occurs, has colors and textures similar to those of the Btv horizon.

Duckston Series

The Duckston series consists of poorly drained and very poorly drained soils that formed in recent sandy marine deposits. These soils are on level flats adjacent to coastal dunes and marshes and in low dune swales. Slopes range from 0 to 2 percent. These soils are siliceous, thermic Typic Psammaquents.

Duckston soils are closely associated with Bayvi, Corolla, Dirego, Kureb, Resota, and Newhan soils. The very poorly drained Bayvi and Dirego soils are in the lower landscape positions in the tidal marshes. Bayvi soils are sandy and have base saturation of more than 35 percent. Dirego soils have an organic surface layer that ranges from 20 to 44 inches in thickness. The somewhat poorly drained Corolla soils are in the slightly higher landscape positions. The moderately well drained Resota soils are in the higher landscape positions and have a B horizon. The excessively drained Kureb and Newhan soils are in the highest landscape positions. Also, Kureb soils have a B horizon.

Typical pedon of Duckston sand in an area of Duckston-Duckston, depressional, complex, frequently flooded; in St. Joe Peninsula State Park, about 1,000 feet north and 1,100 feet east of the southwest corner of sec. 13, T. 7 S., R. 12 W.

A—0 to 2 inches; very dark gray (10YR 3/1) sand; single grained; loose; slightly acid; clear smooth boundary.

Cg1—2 to 7 inches; light brownish gray (10YR 6/2) sand; single grained; loose; slightly acid; clear smooth boundary.

Cg2—7 to 29 inches; light gray (10YR 7/1) sand; single grained; loose; about 5 percent shell fragments; slightly alkaline; abrupt smooth boundary.

Cg3—29 to 80 inches; light gray (2.5YR 7/2) sand; single grained; loose; about 10 percent shell fragments; slightly alkaline.

Reaction ranges from extremely acid to moderately alkaline throughout. In some pedons the soils contain shell fragments. The soils contain few to many grains of black and dark brown heavy minerals.

The Oa or Oe horizon, if it occurs, has hue of 10YR, value of 2 or 3, and chroma of 1 or 2. It is less than 8 inches thick.

The A horizon has hue of 10YR to 5Y, value of 3 to 5, and chroma of 2 or less; or it is neutral in hue and has value of 3 to 5. The texture is fine sand or sand.

The Ab horizon, if it occurs, has hue of 10YR to 5Y, value of 3 or 4, and chroma of 2 or less; or it is neutral in hue and has value of 3 or 4. It has few to many undecomposed plant materials. The texture is fine sand or sand.

The Cg horizon has hue of 10YR to 5Y, value of 5 to 8, and chroma of 2 or less; or it is neutral in hue and has value of 5 to 8. The number of mottles in shades of yellow and brown ranges from none to common. The texture is fine sand or sand.

Eulonia Series

The Eulonia series consists of moderately well drained, nearly level to gently sloping soils that formed in sandy and clayey marine and fluvial sediments. These soils are on uplands, primarily in an area between the Dead Lakes and the Apalachicola River. Slopes range from 0 to 5 percent. These soils are clayey, mixed, thermic Aquic Hapludults.

Eulonia soils are closely associated with Bladen, Kenansville, and Wahee soils. The poorly drained Bladen soils are in the much lower landscape positions. The somewhat poorly drained Wahee soils are in the lower landscape positions. The well drained Kenansville soils are in the higher landscape positions and have an argillic horizon at a depth of 20 to 40 inches.

Typical pedon of Eulonia soils in an area of

Kenansville-Eulonia complex, 0 to 5 percent slopes; in a managed stand of pines and hardwoods, about 2,100 feet east and 750 feet south of the northwest corner of sec. 4, T. 3 S., R. 9 W.

A—0 to 7 inches; dark grayish brown (2.5Y 4/2) fine sandy loam; weak medium granular structure; very friable; strongly acid; clear wavy boundary.

E—7 to 11 inches; light olive brown (2.5Y 5/4) fine sandy loam; weak medium subangular blocky structure; friable; strongly acid; abrupt wavy boundary.

Bt1—11 to 35 inches; yellowish brown (10YR 5/6) clay; common medium distinct yellowish red (5YR 5/6) mottles; strong medium subangular blocky structure; friable; strongly acid; clear wavy boundary.

Bt2—35 to 55 inches; yellowish brown (10YR 5/6) sandy clay; common medium distinct gray (10YR 6/1) and yellowish red (5YR 5/6) mottles; strong medium subangular blocky structure; friable; strongly acid; clear wavy boundary.

BC—55 to 66 inches; yellowish brown (10YR 5/6) sandy clay loam; common coarse prominent gray (10YR 6/1) and common medium distinct yellowish red (5YR 5/6) mottles; weak medium subangular blocky structure; friable; very strongly acid; abrupt wavy boundary.

C—66 to 80 inches; olive yellow (2.5Y 6/6) fine sandy loam; common medium prominent strong brown (10YR 5/8), brownish yellow (10YR 5/6), and light brownish gray (10YR 6/2) mottles; single grained; loose; very strongly acid.

The thickness of the solum ranges from 60 to more than 80 inches. Reaction ranges from very strongly acid to slightly acid throughout, except where the A horizon has been limed.

The A horizon has hue of 10YR or 2.5Y, value of 3 to 6, and chroma of 1 or 2.

The E horizon, if it occurs, has hue of 10YR or 2.5Y, value of 5 to 7, and chroma of 1 to 4. The texture is fine sandy loam, sandy loam, loamy fine sand, or loamy sand.

The Bt horizon has hue of 10YR or 2.5Y, value of 4 to 6, and chroma of 4 to 8. It has mottles in shades of gray, yellow, brown, or red. The texture is sandy clay, clay, or clay loam.

The C horizon has variable color and texture. It is typically sandy and coarsely mottled.

Fuquay Series

The Fuquay series consists of well drained soils that formed in sandy and loamy marine sediments on uplands. Slopes range from 0 to 8 percent. The Fuquay soils are loamy, siliceous, thermic Arenic Plinthic Kandiudults.

The Fuquay soils in Gulf County are a taxadjunct to the series because the pedon that was sampled did not have Kandic properties. This difference does not significantly affect use and management. These taxadjunct soils are loamy, siliceous, thermic Arenic Plinthic Paleudults.

The Fuquay soils in Gulf County are closely associated with Blanton, Clarendon, Dothan, Lucy, and Stilson soils. The well drained Dothan and Lucy soils are in landscape positions similar to those of the Fuquay soils. Dothan soils have an argillic horizon within a depth of 20 inches. Lucy soils have less than 5 percent plinthite within a depth of 35 to 60 inches. The moderately well drained Blanton and Stilson soils are in the slightly lower landscape positions. Blanton soils have an argillic horizon at a depth of more than 40 inches. The somewhat poorly drained Clarendon soils are in the lower landscape positions and have an argillic horizon within a depth of 20 inches.

Typical pedon of Fuquay loamy fine sand; in a cleared field west of Wewahitchka, about 1,650 feet west and 750 feet north of the southeast corner of sec. 22, T. 4 S., R. 10 W.

Ap—0 to 7 inches; dark gray (10YR 4/1) loamy fine sand; weak fine granular structure; very friable; 2 percent ironstone nodules; moderately acid; abrupt wavy boundary.

E—7 to 21 inches; light yellowish brown (10YR 6/4) loamy fine sand; single grained; loose; 5 percent ironstone nodules; moderately acid; abrupt wavy boundary.

BE—21 to 27 inches; brownish yellow (10YR 6/6) fine sandy loam; weak medium subangular blocky structure; friable; 2 percent plinthite and 10 percent ironstone nodules; moderately acid; clear wavy boundary.

Btv1—27 to 42 inches; brownish yellow (10YR 6/6) sandy clay loam; common medium distinct very pale brown (10YR 7/4) and common medium prominent strong brown (7.5YR 5/8) mottles; moderate medium subangular blocky structure; friable; 10 percent plinthite and 2 percent ironstone nodules; strongly acid; abrupt wavy boundary.

Btv2—42 to 52 inches; brownish yellow (10YR 6/6) sandy clay loam; common medium distinct very pale brown (10YR 7/4) and common medium prominent strong brown (7.5YR 5/8) mottles; moderate medium subangular blocky structure; friable; 10 percent plinthite and 2 percent ironstone nodules; strongly acid; abrupt wavy boundary.

Btv3—52 to 80 inches; reticulately mottled light gray (10YR 7/2), reddish brown (7.5YR 6/8), dark yellowish brown (10YR 4/6), and light olive brown (2.5YR 5/6) sandy clay loam; moderate medium subangular blocky structure; firm; 5 percent plinthite; strongly acid.

The solum is more than 60 inches thick. Reaction ranges from very strongly acid to moderately acid throughout, except where the surface layer has been limed. Depth to a horizon containing more than 5 percent plinthite ranges from 35 to 60 inches.

The A or Ap horizon has hue of 10YR, value of 4 or 5, and chroma of 1 to 3.

The E horizon has hue of 10YR, value of 5 or 6, and chroma of 3 to 6. The texture is fine sand or loamy fine sand.

The upper part of the Btv horizon has hue of 10YR, value of 5 or 6, and chroma of 4 to 8. It is sandy loam, fine sandy loam, or sandy clay loam. The lower part of the Btv horizon has hue of 7.5YR or 10YR, value of 4 to 7, and chroma of 2 to 8. In most pedons it is reticulately mottled. It is sandy clay loam.

Kenansville Series

The Kenansville series consists of well drained, nearly level to gently sloping soils that formed in sandy and clayey marine and fluvial sediments. These soils are on uplands, primarily in an area between the Dead Lakes and the Apalachicola River. These soils are loamy, siliceous, thermic Arenic Hapludults.

Kenansville soils are closely associated with Bladen, Eulonia, and Wahee soils. These associated soils have an argillic horizon within a depth of 20 inches and are more than 35 percent clay. The poorly drained Bladen soils are in the much lower landscape positions. The somewhat poorly drained Wahee soils are in the lower landscape positions. The moderately well drained Eulonia soils are in the slightly lower landscape positions.

Typical pedon of Kenansville loamy fine sand in an area of Kenansville-Eulonia complex, 0 to 5 percent slopes; in a managed stand of pines and hardwoods, about 1,000 feet west and 1,850 feet south of the northeast corner of sec. 30, T. 3 S., R. 9 W.

A—0 to 6 inches; very dark grayish brown (10YR 3/2) loamy fine sand; moderate fine granular structure; very friable; moderately acid; clear smooth boundary.

E—6 to 23 inches; yellowish brown (10YR 5/4) loamy fine sand; single grained; loose; moderately acid; clear wavy boundary.

Bt1—23 to 41 inches; brownish yellow (10YR 5/6) sandy clay loam; moderate medium subangular blocky structure; friable; strongly acid; clear wavy boundary.

Bt2—41 to 59 inches; brownish yellow (10YR 6/6) sandy clay loam; common medium prominent red (2.5YR 5/6) and pale brown (10YR 6/3) mottles; moderate medium subangular blocky structure; friable; strongly acid; abrupt irregular boundary.

BC—59 to 71 inches; yellowish red (5YR 5/6) fine sandy loam; common medium prominent light brownish gray (10YR 6/2) and light gray (10YR 7/1) and common medium distinct brownish yellow (10YR 6/6) mottles; weak medium subangular blocky structure; friable; very strongly acid; clear wavy boundary.

C—71 to 80 inches; brownish yellow (10YR 6/6) loamy fine sand; few medium prominent light gray (10YR 72) mottles; single grained; loose; very strongly acid.

The thickness of the solum ranges from 50 to 80 inches. Reaction ranges from very strongly acid to moderately acid throughout, except where the A horizon has been limed.

The A horizon has hue of 7.5YR to 2.5Y, value of 3 to 6, and chroma of 1 to 4.

The E horizon has hue of 10YR or 2.5Y, value of 5 to 8, and chroma of 3 to 8. The texture is loamy fine sand, fine sand, or loamy sand.

The Bt horizon has hue of 7.5YR to 2.5Y, value of 5 to 7, and chroma of 4 to 8. The lower part of the horizon has mottles in varying shades, but gray mottles do not occur within a depth of 48 inches. The texture is sandy loam, fine sandy loam, or sandy clay loam.

The BC horizon, if it occurs, has colors similar to those of the Bt horizon. The texture is sandy loam or fine sandy loam.

The C horizon has hue of 7.5YR to 2.5Y, value of 4 to 7, and chroma of 2 to 8. The texture is sand, loamy sand, or loamy fine sand.

Kenner Series

The Kenner series consists of very poorly drained, nearly level soils that formed in decomposed plant materials and silty and clayey alluvium. These soils are on the flood plain along the Apalachicola River and are frequently flooded. Slopes are generally less than 1 percent. These soils are euic, thermic Fluvaquentic Medisaprists.

Kenner soils are closely associated with Brickyard, Chowan, Mantachie, Maurepas, Meggett, and Wahee soils. The very poorly drained Brickyard soils are in the slightly higher landscape positions, are clayey mineral

soils, and do not have organic layers. The very poorly drained Chowan and Maurepas soils are in landscape positions similar to those of the Kenner soils. Maurepas soils do not have mineral strata to a depth of 51 or more inches. Chowan soils have mineral strata over an organic layer. The poorly drained Meggett soils are in the higher landscape positions along river banks and natural river bars and do not have organic strata. The somewhat poorly drained Mantachie and Wahee soils are in the highest landscape positions along natural levees and river bars and do not have organic strata.

Typical pedon of Kenner muck, in an area of Brickyard, Chowan, and Kenner soils, frequently flooded; in the Indian Swamp, in the southeastern part of Gulf County, lat. 29 degrees 46 minutes 5 seconds N. and long. 85 degrees 10 minutes 35 seconds W.

Oa1—0 to 10 inches; dark brown (7.5YR 3/2) muck; massive; slightly sticky; slightly acid; clear smooth boundary.

Oa2—10 to 38 inches; very dark grayish brown (10YR 3/2) muck; massive; slightly sticky; slightly acid; gradual smooth boundary.

Cg—38 to 42 inches; dark grayish brown (5Y 4/1) silty clay; massive; sticky; slightly acid; clear smooth boundary.

O´a—42 to 46 inches; very dark gray (5Y 3/1) muck; massive; slightly sticky; slightly acid; clear smooth boundary.

C´g—46 to 65 inches; gray (5Y 4/1) silty clay; massive; sticky; slightly acid; clear smooth boundary.

O´´a—65 to 80 inches; very dark gray (10YR 3/1) muck; massive; slightly sticky; neutral.

The thickness of the organic material and the thin strata of mineral layers ranges from 51 to more than 80 inches. Reaction ranges from moderately acid to slightly alkaline throughout.

The Oa, O´a, O´´a, or Oe horizon, if it occurs, has hue of 7.5YR or 10YR, value of 2 or 3, and chroma of 1 or 2. It contains 10 to 50 percent fiber unrubbed and 5 to 20 percent rubbed.

The Cg and C´g horizons have hue of 10YR to 5GY, value of 3 to 5, and chroma of 1. The texture is silty clay, silty clay loam, or the mucky analogs of these textures. The material flows easily between the fingers when squeezed.

Kureb Series

The Kureb series consists of excessively drained, gently undulating to steep soils that formed primarily in sandy eolian deposits (fig. 15). These soils are on coastal remnant dunes. Slopes range from 5 to 20 percent. These soils are thermic, uncoated Spodic Quartzipsamments.

Kureb soils are closely associated with Corolla, Duckston, Mandarin, Newhan, and Resota soils. The excessively drained Newhan soils are in landscape positions similar to those of the Kureb soils adjacent to beaches and do not have a B horizon. The moderately well drained Resota soils are in the slightly lower landscape positions. The somewhat poorly drained Corolla and Mandarin soils are in the lower landscape positions. Corolla soils do not have a B horizon, and Mandarin soils have a well developed spodic horizon. The poorly drained and very poorly drained Duckston soils are in the much lower landscape positions and do not have a B horizon.

Typical pedon of Kureb fine sand in an area of Kureb-Corolla complex, rolling; about 500 feet north and 1,250 feet west of the southeast corner of sec. 20, T. 9 S., R. 11 W.

A—0 to 2 inches; gray (10YR 6/1) fine sand; single grained; loose; very strongly acid; clear smooth boundary.

E—2 to 12 inches; white (10YR 8/1) fine sand; single grained; loose; slightly acid; abrupt irregular boundary.

E/B—12 to 35 inches; white (10YR 8/1) tonguing in a matrix of light yellowish brown (10YR 6/4) fine sand, thin linings of dark yellowish brown (10YR 4/4) between contact of tongue and matrix; single grained; loose; slightly acid; gradual smooth boundary.

C1—35 to 50 inches; white (10YR 8/1) fine sand having thin strata of light yellowish brown (10YR 6/4) fine sand; single grained; loose; slightly acid; gradual smooth boundary.

C2—50 to 80 inches; white (10YR 8/1) fine sand having strata of black (N 2/0) heavy metals; single grained; loose; slightly acid.

The thickness of the solum ranges from 30 to 72 inches. Reaction ranges from very strongly acid to neutral throughout. The texture is sand or fine sand.

The A horizon has hue of 10YR, value of 5 or 6, and chroma of 1.

The upper part of the E horizon has hue of 10YR, value of 6 to 8, and chroma of 1 to 3. Tongues of material from the E horizon are in old root channels in the E/B horizon.

The E part of the E/B horizon has hue of 10YR, value of 8, and chroma of 1 or 2. The Bh and Bw parts of the E/B horizon have hue of 10YR, value of 2 to 6, and chroma of 2 to 4.

The C horizon, if it occurs, has hue of 10YR, value of 7 or 8, and chroma of 1 to 4.

Leefield Series

The Leefield series consists of somewhat poorly drained soils that formed in sandy and loamy marine sediments (fig. 16). These soils are on narrow ridges in areas of flatwoods and on low uplands. Slopes range from 0 to 2 percent. These soils are loamy, siliceous, thermic Arenic Plinthaquic Paleudults.

Leefield soils are closely associated with Albany, Blanton, Pelham, Plummer, Sapelo, and Stilson soils. The somewhat poorly drained Albany soils are in landscape positions similar to those of the Leefield soils, have less than 5 percent plinthite, and have an argillic horizon at a depth of more than 40 inches. The poorly drained Pelham, Plummer, and Sapelo soils are in the lower landscape positions and have less than 5 percent plinthite. Plummer and Sapelo soils have an argillic horizon at a depth of more than 40 inches. Also, Sapelo soils have a spodic horizon. The moderately well drained Blanton and Stilson soils are in the higher landscape positions. Blanton soils have less than 5 percent plinthite and have an argillic horizon at a depth of more than 40 inches.

Typical pedon of Leefield loamy fine sand, about 1,000 feet east and 700 feet north of the southwest corner of sec. 12, T. 5 S., R. 11 W.

Ap—0 to 9 inches; very dark gray (10YR 3/1) loamy fine sand; moderate medium granular structure; very friable; very strongly acid; clear smooth boundary.

E1—9 to 20 inches; light yellowish brown (10YR 6/4) loamy fine sand; single grained; loose; 4 percent ironstone nodules; very strongly acid; clear wavy boundary.

E2—20 to 28 inches; pale brown (10YR 6/3) loamy fine sand; few fine and medium distinct gray (10YR 6/1) and brownish yellow (10YR 6/6) mottles; single grained; loose; 6 percent ironstone nodules; very strongly acid; abrupt wavy boundary.

Btv1—28 to 51 inches; reticulately mottled light brownish gray (10YR 6/2), brownish yellow (10YR 6/6), light gray (10YR 7/2), and yellowish red (5YR 5/6) fine sandy loam; moderate medium subangular blocky structure; friable; 10 percent ironstone nodules; 5 percent plinthite; very strongly acid; gradual wavy boundary.

Btv2—51 to 80 inches; brown (10YR 5/3) sandy clay loam; common medium prominent brownish yellow (10YR 6/8), light gray (5Y 7/1), and yellowish red (5YR 5/8) mottles; moderate medium subangular blocky structure; friable; 5 percent plinthite; very strongly acid.

The solum is 60 or more inches thick. Reaction ranges from very strongly acid to moderately acid in the A horizon, except where lime has been applied, and is very strongly acid or strongly acid in the Btv horizon.

The A or Ap horizon has hue of 10YR, value of 2 to 5, and chroma of 1 or 2.

The E horizon has hue of 10YR, value of 5 to 7, and chroma of 3 to 6. It has few to many mottles in shades of gray, brown, and yellow. The texture is fine sand, loamy sand, or loamy fine sand.

The Bt horizon, if it occurs, and the Btv horizon have hue of 10YR or 2.5Y, value of 5 to 7, and chroma of 2 to 6. They have few to many mottles in shades of brown, yellow, and gray. The texture is fine sandy loam, sandy loam, or sandy clay loam.

Leon Series

The Leon series consists of poorly drained, nearly level soils that formed in sandy marine sediments (fig. 17). These soils are in areas of flatwoods. Slopes range from 0 to 2 percent. These soils are sandy, siliceous, thermic Aeric Alaquods.

Leon soils are closely associated with Dorovan, Lynn Haven, Mandarin, Resota, Rutlege, Pottsburg, and Scranton soils. The very poorly drained Dorovan and Rutlege soils are in the lower landscape positions and do not have a spodic horizon. Dorovan soils are organic soils and are 51 or more inches thick. The poorly drained Lynn Haven, Pottsburg, and Scranton soils are in landscape positions that are similar to those of the Leon soils or slightly lower. Lynn Haven soils have an A horizon that ranges from 8 to 20 inches in thickness. Pottsburg soils have a spodic horizon at a depth of more than 50 inches. Scranton soils do not have a spodic horizon. The somewhat poorly drained Mandarin soils are in the higher landscape positions. The moderately well drained Resota soils are in the much higher landscape positions and have a well developed B horizon.

Typical pedon of Leon fine sand, about 500 feet south and 1,200 feet east of the northwest corner of sec. 10, T. 9 S., R. 10 W.

A—0 to 4 inches; dark gray (10YR 4/1) fine sand; single grained; loose; very strongly acid; clear smooth boundary.

E—4 to 21 inches; light gray (10YR 7/2) fine sand; single grained; loose; very strongly acid; gradual smooth boundary.

Bh—21 to 29 inches; very dark brown (10YR 2/2) fine sand; single grained; loose; very strongly acid; clear irregular boundary.

BC—29 to 35 inches; very pale brown (10YR 7/3) fine sand; common fine prominent strong brown (7.5YR 5/6) mottles; single grained; loose; very strongly acid; clear wavy boundary.
C1—35 to 55 inches; light gray (10YR 7/2) fine sand; common fine prominent mottles; single grained; loose; moderately acid; clear wavy boundary.
C2—55 to 80 inches; white (10YR 8/1) fine sand; single grained; loose; moderately acid.

The solum is more than 30 inches thick. Reaction ranges from extremely acid to slightly acid in all horizons, except where the A horizon has been limed. The texture is dominantly sand or fine sand throughout. The Bh horizon, however, is loamy fine sand in some pedons.

The A horizon has hue of 10YR, value of 2 to 4, and chroma of 1 or 2. When dry, this horizon has a salt-and-pepper appearance.

The E horizon has hue of 10YR or 2.5YR, value of 6 or 7, and chroma of 1 or 2. The combined thickness of the A and E horizons is less than 30 inches.

The Bh horizon has hue of 10YR, value of 2 or 3, and chroma of 1 or 2; or it has hue of 5YR and value and chroma of 2 or 3.

Some pedons have E´ and B´h horizons below the Bh horizon. These horizons have colors that are similar to those of the E and Bh horizons.

The C horizon has hue of 10YR, value of 4 to 8, and chroma of 1 or 2.

Lucy Series

The Lucy series consists of well drained, nearly level to gently sloping soils that formed in sandy and loamy marine and fluvial sediments. These soils are on high uplands. Slopes range from 0 to 5 percent. These soils are loamy, siliceous, thermic Arenic Kandiudults.

Lucy soils are closely associated with Dothan, Fuquay, and Stilson soils. The well drained Dothan and Fuquay soils are in landscape positions similar to those of the Lucy soils and have more than 5 percent plinthite. Also, Dothan soils have an argillic horizon within a depth of 20 inches. The moderately well drained Stilson soils are in the lower landscape positions and have more than 5 percent plinthite.

Typical pedon of Lucy loamy fine sand, 0 to 5 percent slopes; in a fallow field about 600 feet west and 2,050 feet south of the northeast corner of sec. 26, T. 3 S., R. 10 W.

A—0 to 9 inches; very dark grayish brown (10YR 3/2) loamy fine sand; weak fine granular structure; very friable; strongly acid; clear smooth boundary.
E—9 to 30 inches; yellowish brown (10YR 5/6) loamy fine sand; single grained; loose; strongly acid; clear wavy boundary.
Bt1—30 to 37 inches; strong brown (7.5YR 5/6) sandy loam; weak fine subangular blocky structure; friable; strongly acid; clear wavy boundary.
Bt2—37 to 80 inches; yellowish red (5YR 5/6) sandy clay loam; weak fine subangular blocky structure; friable; about 2 percent ironstone nodules; strongly acid.

The solum is more than 60 inches thick. Reaction is strongly acid or moderately acid in the A and E horizons, except where the A horizon has been limed, and is very strongly acid or strongly acid in the Bt horizon.

The A horizon has hue of 5YR to 10YR, value of 3 to 5, and chroma of 2 to 4.

The E horizon has hue of 5YR to 10YR, value of 4 to 7, and chroma of 3 to 8. The texture is loamy fine sand, loamy sand, or fine sand.

The Bt horizon has hue of 2.5YR to 10YR, value of 4 to 6, and chroma of 6 to 8. The texture is sandy loam, fine sandy loam, or sandy clay loam.

Lynn Haven Series

The Lynn Haven series consists of poorly drained, nearly level soils that formed in sandy marine sediments. These soils are in low areas of flatwoods. Slopes range from 0 to 2 percent. These soils are sandy, siliceous, thermic Typic Alaquods.

Lynn Haven soils are closely associated with Leon, Mandarin, Pottsburg, Rutlege, Pamlico, Pickney, and Scranton soils. The somewhat poorly drained Mandarin soils are in the higher landscape positions and have a thinner A horizon than that of the Lynn Haven soils. The poorly drained Leon, Pottsburg, and Scranton soils are in landscape positions that are similar to those of the Lynn Haven soils or slightly higher. Leon soils have a thinner A horizon than that of the Lynn Haven soils. Scranton soils do not have a spodic horizon. Pottsburg soils have a spodic horizon at a depth of more than 51 inches. The very poorly drained Pamlico, Pickney, and Rutlege soils are in depressions and do not have a spodic horizon. Also, Pamlico soils are organic soils.

Typical pedon of Lynn Haven fine sand; in an area of flatwoods near Port St. Joe, about 800 feet south and 550 feet east of the northwest corner of sec. 6, T. 8 S., R. 10 W.

A—0 to 14 inches; fine sand, very dark grayish brown (10YR 3/1) rubbed and salt-and-pepper appearance unrubbed; weak fine granular structure; very friable; very strongly acid; clear wavy boundary.
E—14 to 25 inches; grayish brown (10YR 5/2) fine

sand; single grained; loose; very strongly acid; abrupt wavy boundary.

Bh1—25 to 40 inches; black (10YR 2/1) fine sand; weak medium subangular blocky structure; friable; extremely acid; clear wavy boundary.

Bh2—40 to 48 inches; dark brown (7.5YR 3/2) fine sand; weak medium subangular blocky structure; friable; extremely acid; clear wavy boundary.

E´—48 to 61 inches; pale brown (10YR 6/3) sand; single grained; loose; extremely acid; clear wavy boundary.

B´h—61 to 80 inches; dark brown (10YR 3/3) sand; weak fine subangular blocky structure parting to single grained; very friable; very strongly acid.

The solum is 40 or more inches thick. Reaction ranges from extremely acid to strongly acid throughout, except where the A horizon has been limed. The texture is dominantly sand or fine sand to a depth of 80 inches or more. The Bh horizon, however, is loamy fine sand or loamy sand in some pedons.

The A horizon has hue of 10YR, value of 2 or 3, and chroma of 1; or it is neutral in hue and has value of 2 or 3. The E horizon has hue of 10YR, value of 5 to 7, and chroma of 1 or 2. The combined thickness of the A and E horizons is less than 30 inches.

The Bh or 2Bh horizon, if it occurs, has hue of 10YR or 7.5YR, value of 2 or 3, and chroma of 1 to 3.

Many pedons have a bisequum consisting of an E´ horizon and a B´h horizon. These horizons have colors that are similar to those of the E and Bh horizons.

The Cg horizon, if it occurs, has hue of 10YR, value of 4 to 7, and chroma of 1 or 2.

Mandarin Series

The Mandarin series consists of somewhat poorly drained, nearly level soils that formed in sandy marine and eolian sediments. These soils are on low ridges and knolls in areas of flatwoods. Slopes range from 0 to 2 percent. These soils are sandy, siliceous, thermic Oxyaquic Alorthods.

Mandarin soils are closely associated with Kureb, Leon, Lynn Haven, Pottsburg, Resota, and Scranton soils. The excessively drained Kureb soils are in the much higher landscape positions adjacent to sand dunes and have a less well developed B horizon than that of the Mandarin soils. The moderately well drained Resota soils are in the higher landscape positions and also have a less well developed B horizon than that of the Mandarin soils. The poorly drained Leon, Lynn Haven, Pottsburg, and Scranton soils are in the lower landscape positions and have a thicker surface horizon than that of the Mandarin soils. Pottsburg soils have a spodic horizon at a depth of more than 50 inches. Scranton soils do not have a spodic horizon.

Typical pedon of Mandarin fine sand, about 2,000 feet south and 1,800 feet east of the northwest corner of sec. 32, T. 8 S., R. 10 W.

Ap—0 to 7 inches; very dark gray (10YR 3/1) fine sand; weak fine granular structure; very strongly acid; abrupt wavy boundary.

E—7 to 13 inches; light brownish gray (10YR 6/2) fine sand; single grained; loose; strongly acid; abrupt wavy boundary.

Bh—13 to 17 inches; dark brown (10YR 3/3) fine sand; weak fine subangular blocky structure; very friable; moderately acid; abrupt wavy boundary.

BC—17 to 30 inches; brown (10YR 5/3) fine sand; single grained; loose; moderately acid; clear wavy boundary.

C—30 to 80 inches; white (10YR 8/1) fine sand; single grained; loose; moderately acid.

The solum is 30 or more inches thick. Reaction ranges from extremely acid to moderately acid in the A and E horizons and from extremely acid to neutral in the Bh horizon. Reaction may be higher where the A horizon has been limed.

The A or Ap horizon has hue of 10YR, value of 3 to 5, and chroma of 1. When dry, this horizon has a salt-and-pepper appearance due to mixing of organic matter and white sand grains.

The E horizon has hue of 10YR, value of 6 to 8, and chroma of 2. The combined thickness of the A and E horizons is less than 30 inches.

The Bh horizon has hue of 5YR, value of 2 to 4, and chroma of 2 to 4. This horizon is weakly cemented and is well coated with organic matter.

The BC or CB horizon, if it occurs, has hue of 10YR, value of 5 or 6, and chroma of 3 or 4.

The C horizon has hue of 10YR, value of 7 or 8, and chroma of 1 or 2.

Mantachie Series

The Mantachie series consists of somewhat poorly drained, nearly level soils that formed in recent alluvium. These soils are on natural levees and bars along the Apalachicola River and are frequently flooded. Slopes range from 0 to 2 percent. These soils are fine-loamy, siliceous, acid, thermic Aeric Endoaquepts.

Mantachie soils are closely associated with Brickyard, Chowan, Kenner, Wahee, and Ochlockonee soils. The very poorly drained Chowan and Kenner soils are in the much lower landscape positions and have organic layers. The very poorly drained and poorly

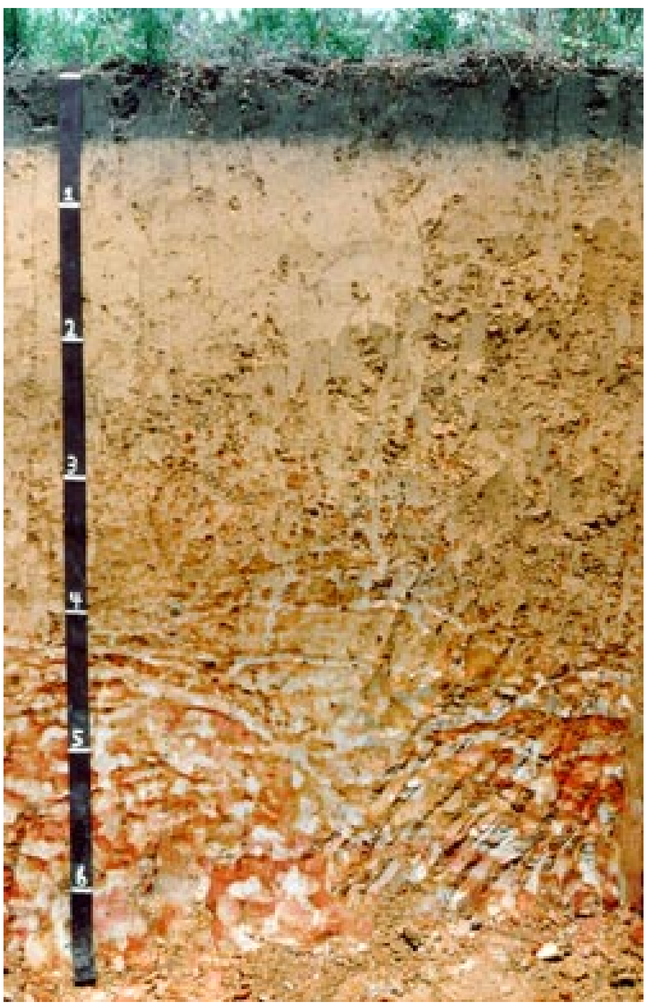

Figure 10.—Typical profile of Albany sand.

Figure 11.—Typical profile of Blanton sand.

Figure 12.—Typical profile of Clarendon loamy fine sand.

Figure 13.—Typical profile of Corolla fine sand.

Figure 14.—Typical profile of Dothan loamy sand.

Figure 15.—Typical profile of Kureb fine sand.

Figure 16.—Typical profile of Leefield loamy fine sand.

Figure 17.—Typical profile of Leon fine sand.

Figure 18.—Typical profile of Ocilla loamy fine sand.

Figure 19.—Typical profile of Rains fine sandy loam.

drained Brickyard soils are in the slightly lower landscape positions and are more than 35 percent clay. The somewhat poorly drained Wahee soils are in the slightly higher landscape positions and are more than 35 percent clay. The moderately well drained Ochlockonee soils are in the higher landscape positions.

Typical pedon of Mantachie fine sandy loam in an area of Wahee-Mantachie-Ochlockonee complex, commonly flooded; about 400 feet west and 900 feet south of the northeast corner of sec. 27, T. 3 S., R. 9 W.

A—0 to 5 inches; dark grayish brown (10YR 4/2) and dark yellowish brown (10YR 4/4) fine sandy loam; weak fine granular structure; very friable; very strongly acid; clear smooth boundary.

Bw1—5 to 12 inches; brown (7.5YR 4/4) loam; common medium distinct brown (7.5YR 5/2) and yellowish red (5YR 5/6) mottles; moderate medium subangular blocky structure; friable; common flakes of mica; very strongly acid; gradual wavy boundary.

Bw2—12 to 20 inches; pale brown (7.5YR 6/3) silty clay loam; many medium distinct reddish yellow (7.5YR 6/6) and gray (10YR 6/1) mottles; moderate medium subangular blocky structure; friable; common flakes of mica; very strongly acid; clear smooth boundary.

Bw3—20 to 28 inches; reddish yellow (7.5YR 6/6) fine sandy loam; many medium distinct light gray (10YR 7/2) and yellowish brown (10YR 5/8) mottles; weak fine subangular blocky structure; friable; common flakes of mica; very strongly acid; gradual wavy boundary.

BCg—28 to 42 inches; light gray (10YR 7/1) loam; many medium prominent strong brown (7.5YR 5/8) and reddish yellow (7.5YR 7/6) mottles; massive; friable; common flakes of mica; very strongly acid; gradual wavy boundary.

Cg1—42 to 65 inches; gray (10YR 6/1) fine sandy loam and stratified sand; common fine and medium distinct strong brown (7.5YR 5/8) and yellow (10YR 7/6) mottles; massive; friable; very strongly acid; gradual wavy boundary.

Cg2—65 to 80 inches; grayish brown (10YR 5/2) sand; single grained; loose; strongly acid.

The solum is 40 or more inches thick. Reaction ranges from extremely acid to strongly acid throughout. Flakes of mica are common throughout.

The A horizon has hue of 10YR, value of 3 to 5, and chroma of 1 to 4.

The AB or BA horizon, if it occurs, has hue of 10YR, value of 4 to 7, and chroma of 3 to 6. The texture is loam, silt loam, clay loam, or silty clay loam.

The Bw horizon has hue of 7.5YR to 2.5Y, value of 4 to 7, and chroma of 3 to 8. It has mottles in shades of brown, yellow, red, or gray. The texture is sandy clay loam, fine sandy loam, sandy loam, loam, clay loam, silt loam, or silty clay loam.

The BCg horizon, if it occurs, has hue of 10YR or 2.5Y, value of 4 to 7, and chroma of 1 or 2. It has textures similar to those of the Bw horizon.

The Cg horizon has colors similar to those of the BCg horizon. Below a depth of 40 inches, texture is variable, commonly stratified, and ranges from sand to clay.

Maurepas Series

The Maurepas series consists of very poorly drained, nearly level organic soils that formed in decaying plant remains. These soils are in estuarine marshes and swamps. In some areas these soils are flooded at least several times each month by high tides. Slopes generally are less than 1 percent. These soils are euic, thermic Typic Medisaprists.

Maurepas soils are closely associated with Bayvi, Brickyard, Chowan, Kenner, Pamlico, and Pickney soils. Bayvi soils are in positions similar to those of the Maurepas soils but have sandy layers within a depth of 51 inches. Brickyard soils are in the slightly higher landscape positions and have montmorillonitic mineralogy. Chowan, Kenner, and Pamlico soils are in landscape positions similar to those of the Maurepas soils. Chowan soils have mineral strata over organic material. Kenner soils have mineral strata. Pamlico soils have organic material that ranges from 16 to 51 inches in thickness. Pickney soils are in the slightly higher landscape positions and are sandy throughout.

Typical pedon of Maurepas muck, frequently flooded; in an estuarine sawgrass marsh near Searcy Creek, about 1,100 feet north and 150 feet east of the southwest corner of sec. 26, T. 7 S., R. 10 W.

Oa1—0 to 3 inches; very dark brown (10YR 2/2) muck; about 40 percent fiber unrubbed and 15 percent rubbed; moderate medium platy structure; very friable; neutral; clear wavy boundary.

Oa2—3 to 58 inches; black (N 2/0) muck; massive; sticky; neutral; gradual wavy boundary.

Oa3—58 to 80 inches; black (N 2/0) muck; few thin strata of very dark gray (10YR 3/1) mucky loamy sand; massive; sticky; neutral.

The thickness of the organic material ranges from 51 to more than 80 inches. Reaction ranges from moderately acid to moderately alkaline throughout. The organic layers contain between 15 and 45 percent mineral matter.

The O horizon has hue of 7.5YR or 10YR, value of 2 or 3, and chroma of 2 or less; or it is neutral in hue and has value of 2 or 3.

The Cg horizon, if it occurs, has hue of 10YR to 5Y, value of 3 or 4, and chroma of 1 or 2. The texture is mucky sand, loamy sand, sandy loam, or clay.

Meadowbrook Series

The Meadowbrook series consists of poorly drained, nearly level soils that formed in loamy marine sediments. These soils are on flood plains. Slopes range from 0 to 2 percent. These soils are loamy, siliceous, thermic Grossarenic Endoaqualfs.

Meadowbrook soils are closely associated with Brickyard, Meggett, and Plummer soils. The poorly drained Plummer soils are in landscape positions similar to those of the Meadowbrook soils and have a base saturation of less than 35 percent. The poorly drained Meggett soils are in the slightly lower landscape positions on the flood plain and have an argillic horizon within a depth of 20 inches. The very poorly drained Brickyard soils are in the lower landscape positions on the flood plain and do not have a thick, sandy epipedon.

Typical pedon of Meadowbrook fine sand, occasionally flooded; in Cerser Swamp, about 2,200 feet west and 2,500 feet north of the southeast corner of sec. 12, T. 6 S., R. 11 W.

A—0 to 4 inches; very dark grayish brown (10YR 3/2) fine sand; weak fine granular structure; very friable; strongly acid; abrupt smooth boundary.

Eg1—4 to 25 inches; light gray (10YR 7/1) and dark grayish brown (10YR 4/2) sand; single grained; loose; moderately acid; clear smooth boundary.

Eg2—25 to 61 inches; grayish brown (10YR 5/2) fine sand; single grained; loose; moderately acid; clear smooth boundary.

Btg—61 to 80 inches; light gray (10YR 7/2) fine sandy loam; weak medium subangular blocky structure; friable; very slightly acid.

The solum is 50 or more inches thick. Reaction dominantly ranges from extremely acid to neutral in the A horizon, from extremely acid to moderately alkaline in the Eg horizon, and from very strongly acid to moderately alkaline in the Btg horizon. Reaction may be higher where the A horizon has been limed.

The A horizon has hue of 10YR, value of 2 to 4, and chroma of 1 or 2. The texture is sand or fine sand.

The Eg horizon has hue of 10YR, value of 4 to 7, and chroma of 1 or 2. In some pedons it has mottles in shades of gray, yellow, and brown. The texture is sand or fine sand.

The Btg horizon has hue of 10YR to 5Y, value of 4 to 7, and chroma of 2 or less. The texture is sandy loam or fine sandy loam.

Meggett Series

The Meggett series consists of poorly drained, nearly level soils that formed in clayey and loamy alluvium. These soils are on low terraces along the Apalachicola River and its tributaries and distributaries. Slopes generally are less than 1 percent. These soils are fine, mixed, thermic Typic Albaqualfs.

Meggett soils are closely associated with Brickyard, Chowan, Kenner, Meadowbrook, and Ocilla soils. The somewhat poorly drained Ocilla soils are in the higher landscape positions, are less than 35 percent clay, and have an argillic horizon at a depth of 20 to 40 inches. The poorly drained Meadowbrook soils are in the slightly higher landscape positions, are less than 35 percent clay, and have an argillic horizon at a depth of more than 40 inches. The very poorly drained Brickyard, Chowan, and Kenner soils are in the lower landscape positions. Brickyard soils have montmorillonitic mineralogy. Chowan soils have mineral strata over organic material. Kenner soils are organic with mineral strata.

Typical pedon of Meggett fine sandy loam, occasionally flooded; near the Brothers River, 450 feet east and 200 feet south of the northwest corner of sec. 17, T. 6 S., R. 8 W.

Ap—0 to 5 inches; dark grayish brown (10YR 4/2) fine sandy loam; moderate medium subangular blocky structure; friable; slightly sticky, slightly plastic; moderately acid; abrupt wavy boundary.

Btg1—5 to 15 inches; dark grayish brown (2.5Y 4/2) sand clay loam; moderate medium subangular blocky structure; slightly sticky, slightly plastic; moderately acid; clear wavy boundary.

Btg2—15 to 32 inches; gray (N 5/0) sandy clay; weak medium and coarse subangular blocky structure; sticky, plastic; moderately acid; clear wavy boundary.

BCg—32 to 80 inches; dark gray (5Y 5/1) and gray (5Y 6/1) clay; massive; sticky, plastic; slightly acid.

The thickness of the solum ranges from 40 to 80 inches. Reaction ranges from very strongly acid to slightly acid in the A horizon, except where lime has been applied, and is strongly acid or moderately acid in the upper part of the Btg horizon. It ranges from slightly acid to moderately alkaline in the underlying horizons.

The A or Ap horizon has hue of 10YR, value of 2 to 4, and chroma of 1 or 2.

The Btg horizon has hue of 10YR to 5Y, value of 4 to 7, and chroma of 2 or less; or it is neutral in hue and has value of 4 to 7. In some pedons it has mottles in shades of brown, yellow, olive, and gray. The texture is sandy clay loam, clay loam, or clay.

The BCg horizon, if it occurs, has hue of 2.5Y or 5Y, value of 4 to 7, and chroma of 1 or 2. The texture is sandy clay or clay.

Newhan Series

Newhan series consists of excessively drained, gently rolling to steep soils that formed in recent, sandy eolian deposits. These soils are on coastal dunes. Slopes range from 2 to 30 percent. These soils are thermic, uncoated Typic Quartzipsamments.

Newhan soils are closely associated with Corolla, Duckston, Kureb, and Resota soils. The excessively drained Kureb soils are in landscape positions similar to those of the Newhan soils and have a B horizon. The moderately well drained Resota soils are in the lower landscape positions and have a B horizon. The moderately well drained and somewhat poorly drained Corolla soils are in the lower landscape positions. The poorly drained Duckston soils are in the very low landscape positions.

Typical pedon of Newhan fine sand in an area of Newhan-Corolla complex, rolling; near Cape San Blas, about 400 feet north and 1,800 feet east of the southwest corner of sec. 25, T. 8 S., R. 12 W.

A—0 to 1 inch; gray (10YR 5/1) fine sand; weak fine granular structure; very friable; moderately acid; clear smooth boundary.

C1—1 to 14 inches; white (10YR 8/2) fine sand; single grained; loose; neutral; gradual wavy boundary.

C2—14 to 80 inches; white (10YR 8/2) fine sand; single grained; loose; neutral.

The combined thickness of the A and C horizons is more than 72 inches. Reaction ranges from extremely acid to slightly alkaline throughout. The texture is sand or fine sand. Some pedons contain few or common grains of dark minerals.

The A horizon, if it occurs, has hue of 10YR, value of 5 or 6, and chroma of 1 or 2.

The C horizon has hue of 10YR, value of 6 to 8, and chroma of 1 or 2.

The Ab horizon, if it occurs, has colors similar to those of the A horizon.

Ochlockonee Series

The Ochlockonee series consists of moderately well drained, nearly level soils that formed in sandy and loamy alluvium. These soils are on natural levees and bars on the flood plains along the Apalachicola River and its distributaries. These soils are occasionally flooded. Slopes generally are 0 to 2 percent. These soils are a coarse-loamy, siliceous, acid, thermic Typic Udifluvents.

Ochlockonee soils are associated with Brickyard, Mantachie, and Wahee soils. The very poorly drained Brickyard soils are in the lower landscape positions and are more than 35 percent clay. The somewhat poorly drained Mantachie and Wahee soils are in the slightly lower landscape positions. Wahee soils are more than 35 percent clay.

Typical pedon of Ochlockonee silt loam in an area of Wahee-Mantachie-Ochlockonee complex, commonly flooded; on a natural levee along the Apalachicola River, about 2,800 feet south and 1,200 feet west of the northeast corner of sec. 16, T. 4 S., R. 9 W.

A—0 to 4 inches; very dark grayish brown (10YR 3/2) silt loam; weak fine granular structure; very friable; very strongly acid; abrupt smooth boundary.

C1—4 to 8 inches; yellowish brown (10YR 5/6) loamy sand; single grained; loose; strongly acid; abrupt smooth boundary.

C2—8 to 16 inches; yellowish brown (10YR 5/4) loamy sand; single grained; loose; strongly acid; abrupt smooth boundary.

C3—16 to 21 inches; brownish yellow (10YR 6/6) coarse sand; single grained; loose; strongly acid; abrupt smooth boundary.

C4—21 to 25 inches; dark yellowish brown (10YR 4/4) silt loam; common coarse distinct gray (10YR 6/1) and few medium distinct strong brown (7.5YR 4/6) mottles; massive; friable; strongly acid; abrupt smooth boundary.

C5—25 to 42 inches; brownish yellow (10YR 6/6) loamy fine sand; single grained; loose; strongly acid; abrupt smooth boundary.

C6—42 to 55 inches; yellowish brown (10YR 5/6) loam; common medium prominent gray (10YR 6/1) mottles; massive; friable; strongly acid; abrupt smooth boundary.

C7—55 to 80 inches; gray (10YR 6/1) loam; common medium prominent yellowish brown (10YR 5/4), dark brown (7.5YR 4/4), and strong brown (7.5YR 4/6) mottles; massive; friable; strongly acid.

The solum is less than 6 inches thick. Reaction ranges from very strongly acid to slightly acid in the A horizon and is very strongly acid or strongly acid in the C horizon.

The A horizon has hue of 7.5YR or 10YR, value of 3 to 5, and chroma of 2 to 4.

The upper part of the C horizon has hue of 7.5YR or 10YR and value and chroma of 4 to 6. In some pedons the lower part of the C horizon has value and chroma of 3. The texture is sand, coarse sand, fine sand, loamy sand, loamy fine sand, loam, or silt loam. The C horizon is commonly finely stratified.

Ocilla Series

The Ocilla series consists of somewhat poorly drained, nearly level soils that formed in sandy and loamy alluvium and marine sediments (fig. 18). These soils are on terraces and are occasionally flooded. Slopes range from 0 to 2 percent. These soils are loamy, siliceous, thermic Aquic Arenic Paleudults.

Ocilla soils are closely associated with Leefield, Meadowbrook, Stilson, and Meggett soils. The poorly drained Meadowbrook and Meggett soils are in the lower landscape positions. Meggett soils are more than 35 percent clay and have an argillic horizon within a depth of 20 inches. Meadowbrook soils have an argillic horizon at a depth of more than 40 inches. The somewhat poorly drained Leefield soils are in landscape positions similar to those of the Ocilla soils and have 5 percent or more plinthite. The moderately well drained Stilson soils are in the higher landscape positions and have 5 percent plinthite.

Typical pedon of Ocilla loamy fine sand, overwash, occasionally flooded; on a low terrace above the flood plain along the Apalachicola River, about 2,300 feet west and 1,550 feet north of the southeast corner of sec. 7, T. 6 S., R. 8 W.

A—0 to 5 inches; very dark grayish brown (10YR 3/2) loamy fine sand; moderate medium granular structure; very friable; strongly acid; abrupt smooth boundary.

E—5 to 30 inches; yellowish brown (10YR 5/4) loamy fine sand; common medium distinct light brownish gray (10YR 6/2) mottles in the lower part of the horizon; single grained; loose; strongly acid; abrupt smooth boundary.

Bt1—30 to 40 inches; light olive brown (2.5Y 5/6) sandy clay loam; common medium distinct light brownish gray (10YR 6/2) and yellowish brown (10YR 5/6) mottles; weak medium subangular blocky structure; friable; strongly acid; clear smooth boundary.

Bt2—40 to 64 inches; light olive brown (2.5Y 5/6) sandy clay loam; common medium distinct light gray (10YR 7/2) and yellowish brown (10YR 5/6) mottles; moderate medium subangular blocky structure; friable; strongly acid; clear smooth boundary.

Cg—64 to 80 inches; olive yellow (2.5Y 6/6) stratified sand and loamy sand; many medium distinct light brownish gray (2.5Y 6/2), light gray (10YR 7/2), and yellowish brown (10YR 5/6) mottles; single grained; loose; strongly acid.

The thickness of the solum ranges from 60 to more than 80 inches. Reaction is very strongly acid or strongly acid throughout, except where the A horizon has been limed.

The A horizon has hue of 10YR, value of 3 to 5, and chroma of 1 or 2.

The E horizon has hue of 10YR, value of 5 to 7, and chroma of 2 to 4. It has mottles in shades of brown and gray. The texture is loamy fine sand or loamy sand.

The Bt horizon has hue of 10YR or 2.5Y, value of 5 to 7, and chroma of 3 to 6. It has mottles in shades of gray, yellow, and brown. The texture is sandy clay loam or fine sandy loam.

The BC horizon or Cg horizon, if it occurs, has colors similar to those of the Bt horizon. The BC horizon has textures similar to those of the Bt horizon. The texture of the Cg horizon is variable.

Ortega Series

The Ortega series consists of moderately well drained, nearly level to gently sloping soils that formed in sandy marine or eolian sediments. These soils are on uplands. Slopes range from 0 to 3 percent. These soils are thermic, uncoated Typic Quartzipsamments.

Ortega soils are closely associated with Albany, Blanton, and Ridgewood soils. The somewhat poorly drained Albany and Ridgewood soils are in the lower landscape positions. Albany soils have an argillic horizon at a depth of more than 40 inches. The moderately well drained Blanton soils are in landscape positions similar to those of the Ortega soils and have an argillic horizon at a depth of more than 40 inches.

Typical pedon of Ortega fine sand, 0 to 3 percent slopes; in a second growth forest near the Bay County line, about 1,750 feet south and 1,900 feet east of the southwest corner of sec. 6, T. 5 S., R. 11 W.

Ap—0 to 7 inches; gray (10YR 5/1) fine sand; weak fine granular structure; very friable; very strongly acid; clear wavy boundary.

C1—7 to 38 inches; brownish yellow (10YR 6/6) fine sand; single grained; loose; very strongly acid; gradual wavy boundary.

C2—38 to 61 inches; light yellowish brown (10YR 6/4) fine sand; few fine faint light gray and few fine distinct brownish yellow (10YR 6/6) mottles below a depth of 48 inches; single grained; loose; very strongly acid; gradual wavy boundary.

C3—61 to 80 inches; very pale brown (10YR 7/3) fine

sand; many medium and coarse distinct yellowish brown (10YR 6/6) mottles; single grained; loose; strongly acid.

The combined thickness of the A and C horizons is more than 80 inches. Reaction ranges from extremely acid to slightly acid throughout, except where the A horizon has been limed. The texture is fine sand or sand.

The A or Ap horizon has hue of 10YR, value of 3 to 5, and chroma of 1 to 3.

The upper part of the C horizon has hue of 10YR, value of 6 or 7, and chroma of 4 to 6. The lower part has hue of 10YR, value of 6 or 7, and chroma of 3 or 4. Below a depth of 48 inches, the C horizon has few or common brown and yellowish red mottles that are indicative of wetness.

Pamlico Series

The Pamlico series consists of very poorly drained, nearly level soils that formed in decaying plant remains. These soils are in depressions, in poorly defined drainageways, and on flood plains. Slopes are 0 to 1 percent. These soils are sandy or sandy-skeletal, siliceous, dysic, thermic Terric Medisaprists.

Pamlico soils are closely associated with Dorovan, Lynn Haven, Maurepas, Pickney, Rutlege, and Scranton soils. The very poorly drained Dorovan and Maurepas soils are in landscape positions similar to those of the Pamlico soils and have organic material to a depth of more than 51 inches. The very poorly drained Pickney and Rutlege soils are in the slightly higher landscape positions and are sandy mineral soils. The poorly drained Lynn Haven and Scranton soils are in the higher landscape positions and are mineral soils. Also, Lynn Haven soils have a spodic horizon within a depth of 30 inches.

Typical pedon of Pamlico soil, in an area of Pickney-Pamlico complex, depressional; about 200 feet south and 200 feet west of the northeast corner of sec. 7, T. 5 S., R. 11 W.

Oa1—0 to 7 inches; dark brown (7.5YR 3/2) muck; about 30 percent fiber unrubbed and 8 percent rubbed; moderate fine granular structure; slightly sticky; extremely acid; abrupt wavy boundary.

Oa2—7 to 22 inches; black (10YR 2/1) muck; 5 percent fiber unrubbed; massive; slightly sticky; extremely acid; abrupt wavy boundary.

Cg1—22 to 28 inches; very dark grayish brown (10YR 3/2) fine sand that has pockets of dark gray (10YR 4/1); single grained; nonsticky; extremely acid; gradual wavy boundary.

Cg2—28 to 69 inches; very dark brown (10YR 2/2) and very dark grayish brown (10YR 3/2) fine sand; single grained; nonsticky; extremely acid; gradual wavy boundary.

Cg3—69 to 80 inches; dark grayish brown (10YR 4/2) fine sand; single grained; nonsticky; extremely acid.

The thickness of the organic material ranges from 16 to 51 inches. Reaction is extremely acid or very strongly acid throughout.

The Oa horizon has hue of 10YR, value of 2, and chroma of 1 or 2; or it has hue of 7.5YR, value of 2 or 3, and chroma of 1. Surface horizons that are more than 20 percent fiber after rubbing are 0 to 7 inches thick.

The Cg horizon has hue of 10YR, value of 2 to 6, and chroma of 1 or 2; or it has hue of 2.5Y, value of 4, and chroma of 2. The texture is fine sand or sand.

Pantego Series

The Pantego series consists of very poorly drained, nearly level soils that formed in loamy coastal plain sediments. These soils are in depressions and poorly defined drainageways. Slopes are less than 2 percent. These soils are fine-loamy, siliceous, thermic Umbric Paleaquults.

Pantego soils are closely associated with Bayboro, Bladen, Croatan, and Surrency soils. The very poorly drained Bayboro and Surrency soils are in landscape positions similar to those of the Pantego soils. Bayboro soils are more than 35 percent clay. Surrency soils have an argillic horizon at a depth of 20 to 40 inches. The poorly drained Bladen soils are in the slightly higher positions and have a clayey subsoil. The very poorly drained Croatan soils are in the slightly lower landscape positions and have an organic surface layer that ranges from 16 to 50 inches in thickness.

Typical pedon of Pantego loamy sand, in an area of Pantego and Bayboro soils, depressional; about 200 feet west and 2,400 feet south of the northeast corner of sec. 5, T. 4 S., R. 10 W.

A1—0 to 10 inches; very dark gray (10YR 3/1) loamy sand; weak fine granular structure; very friable; very strongly acid; clear wavy boundary.

A2—10 to 18 inches; very dark grayish brown (10YR 3/2) loamy sand; weak fine granular structure; friable; very strongly acid; clear wavy boundary.

Btg1—18 to 45 inches; light gray (10YR 7/1) sandy loam; weak medium subangular blocky structure; friable; very strongly acid; clear wavy boundary.

Btg2—45 to 80 inches; light gray (10YR 7/1) sandy

clay loam; weak medium subangular blocky structure; friable; very strongly acid.

The solum is more than 60 inches thick. Reaction ranges from extremely acid to strongly acid throughout.

The A horizon has hue of 10YR, value of 2 or 3, and chroma of 1 or 2. The texture is loamy sand, sandy loam, or fine sandy loam.

The Btg horizon has hue of 10YR to 5Y, value of 4 to 7, and chroma of 1 or 2. The texture is sandy loam, fine sandy loam, sandy clay loam, or clay loam.

Pelham Series

The Pelham series consists of poorly drained, nearly level soils that formed in sandy and loamy coastal plain sediments. These soils are in low areas of flatwoods and on low flats. Slopes range from 0 to 2 percent. These soils are loamy, siliceous, thermic Arenic Paleaquults.

Pelham soils are closely associated with Alapaha, Leefield, Plummer, Rains, and Surrency soils. The very poorly drained Surrency soils are in depressional landscape positions. The poorly drained Alapaha, Plummer, and Rains soils are in landscape positions similar to those of the Pelham soils. Alapaha soils have 10 to 35 percent plinthite. Plummer soils have an argillic horizon at a depth of more than 40 inches. Rains soils have an argillic horizon within a depth of 20 inches. The somewhat poorly drained Leefield soils are in the higher landscape positions and have 5 percent or more plinthite.

Typical pedon of Pelham loamy fine sand; in a pine plantation, about 1,400 feet west and 1,750 feet north of the southeast corner of sec. 14, T. 5 S., R. 10 W.

A—0 to 7 inches; black (10YR 2/1) loamy fine sand; few fine prominent yellowish brown (10YR 5/6) mottles; moderate medium granular structure; very friable; very strongly acid; clear wavy boundary.

E—7 to 16 inches; dark gray (10YR 5/1) loamy fine sand; few fine prominent yellowish brown (10YR 5/6) mottles; moderate medium granular structure; very friable; very strongly acid; clear wavy boundary.

Eg—16 to 31 inches; grayish brown (10YR 5/2) loamy fine sand; common medium distinct brownish yellow (10YR 6/6) and yellowish brown (10YR 5/8) mottles; single grained; loose; very strongly acid; clear wavy boundary.

Btg1—31 to 52 inches; gray (10YR 6/1) fine sandy loam; few fine prominent yellowish brown (10YR 5/6) rhizospheres; common medium distinct brown (10YR 5/3) and yellowish brown (10YR 5/6) mottles; moderate medium subangular blocky structure; friable; very strongly acid; clear wavy boundary.

Btg2—52 to 80 inches; gray (N 6/0) sandy clay loam; few fine prominent strong brown (7.5YR 5/6) rhizospheres; common medium prominent yellowish brown (10YR 6/6) mottles; weak medium subangular blocky structure; friable; very strongly acid.

The solum is more than 60 inches thick. Reaction ranges from extremely acid to strongly acid throughout, except where the A horizon has been limed.

The A horizon has hue of 10YR, value of 2 or 3, and chroma of 1.

The E horizon has hue of 10YR, value of 4 to 6, and chroma of 1 or 2. It has mottles in shades of brown and yellow. The texture is loamy fine sand, loamy sand, or fine sand.

The Btg horizon has hue of 10YR or 2.5Y, value of 5 to 7, and chroma of 1 or 2; or it is neutral in hue and has value of 5 to 7. It has mottles in shades of yellow, brown, and gray. The texture is sandy clay loam, fine sandy loam, or sandy loam.

Pickney Series

The Pickney series consists of very poorly drained, nearly level soils that formed in sandy marine and fluvial sediments. These soils are in depressions, in poorly defined drainageways, and on flood plains. Slopes are 0 to 1 percent. These soils are sandy, siliceous, thermic Cumulic Humaquepts.

Pickney soils are closely associated with Dorovan, Lynn Haven, Maurepas, Pamlico, Rutlege, and Scranton soils. The very poorly drained Rutlege soils are in landscape positions that are similar to those of the Pickney soils or slightly higher. Also, Rutlege soils have a thinner surface horizon than that of the Pickney soils. The very poorly drained Dorovan, Maurepas, and Pamlico soils are in the lower landscape positions and have an organic horizon that is more than 16 inches thick. The poorly drained Lynn Haven and Scranton soils are in the higher landscape positions and have surface and subsurface horizons with a combined thickness of less than 20 inches.

Typical pedon of Pickney fine sand in an area of Pickney-Pamlico complex, depressional; about 1,000 feet north and 200 feet west of the southeast corner of sec. 32, T. 7 S., R. 10 W.

A1—0 to 11 inches; black (10YR 2/1) fine sand; weak fine granular structure; very strongly acid; clear wavy boundary.

A2—11 to 42 inches; very dark brown (10YR 2/2) fine

sand; single grained; loose; very strongly acid; gradual wavy boundary.

A3—42 to 51 inches; very dark grayish brown (10YR 3/2) fine sand; single grained; loose; very strongly acid; clear wavy boundary.

Cg—51 to 80 inches; grayish brown (10YR 5/2) fine sand; single grained; loose; very strongly acid.

Reaction ranges from extremely acid to moderately acid throughout. The texture is sand or fine sand throughout.

The A horizon has hue of 10YR, value of 2 or 3, and chroma of 1 or 2; or it has hue of 7.5YR and value and chroma of 2.

The Cg horizon has hue of 10YR, value of 4 to 6, and chroma of 1 or 2.

Plummer Series

The Plummer series consists of poorly drained, nearly level soils that formed in sandy and loamy marine sediments. These soils are in areas of flatwoods and on broad flats. Slopes range from 0 to 2 percent. These soils are loamy, siliceous, thermic Grossarenic Paleaquults.

Plummer soils are closely associated with Alapaha, Albany, Pelham, Rains, Sapelo, Stilson, and Surrency soils. The very poorly drained Surrency soils are in the lower landscape positions and have an argillic horizon at a depth of 20 to 40 inches. The poorly drained Alapaha, Pelham, Rains, and Sapelo soils are in landscape positions similar to those of the Plummer soils. Alapaha soils have an argillic horizon at a depth of 20 to 40 inches and have 10 to 35 percent plinthite. Pelham soils have an argillic horizon at a depth of 20 to 40 inches. Rains soils have an argillic horizon within a depth of 20 inches. Sapelo soils have a spodic horizon within a depth of 30 inches. The somewhat poorly drained Albany soils are in the higher landscape positions. The moderately well drained Stilson soils are in the higher landscape positions, have an argillic horizon at a depth of 20 to 40 inches, and have more than 5 percent plinthite.

Typical pedon of Plummer fine sand; in a pine plantation, about 500 feet east and 1,300 feet south of the northwest corner of sec. 2, T. 7 S., R. 9 W.

A—0 to 10 inches; very dark gray (10YR 3/1) fine sand; weak fine granular structure; very friable; strongly acid; clear wavy boundary.

Eg1—10 to 15 inches; gray (10YR 5/1) fine sand; single grained; loose; strongly acid; clear wavy boundary.

Eg2—15 to 28 inches; light gray (10YR 6/1) and dark gray (10YR 4/1) fine sand; few medium distinct yellowish brown (10YR 5/6) and light yellowish brown (10YR 6/4) mottles; single grained; loose; strongly acid; gradual wavy boundary.

Eg3—28 to 42 inches; gray (10YR 5/1) loamy fine sand; few fine distinct yellowish brown (10YR 5/4) mottles; weak fine subangular blocky structure; very friable; strongly acid; gradual wavy boundary.

Btg1—42 to 60 inches; grayish brown (10YR 5/2) fine sandy loam; few fine distinct yellowish brown (10YR 5/6) and light yellowish brown (10YR 6/4) mottles; moderate medium subangular blocky structure; friable; strongly acid; gradual wavy boundary.

Btg2—60 to 72 inches; gray (10YR 6/1) and light brownish gray (10YR 6/2) fine sandy loam; weak medium subangular blocky structure; friable; very strongly acid; gradual wavy boundary.

Btg3—72 to 80 inches; light gray (2.5Y 7/1) fine sandy loam; weak medium subangular blocky structure; friable; very strongly acid.

The solum is 72 or more inches thick. Reaction ranges from extremely acid to strongly acid throughout, except where the A horizon has been limed.

The A horizon has hue of 10YR, value of 2 or 3, and chroma of 1 or 2.

The Eg horizon has hue of 10YR, value of 5 or 6, and chroma of 1 or 2. The texture is sand, fine sand, or loamy fine sand.

The Btg horizon has hue of 10YR or 2.5Y, value of 5 to 7, and chroma of 2 or less. It has mottles in shades of brown and yellow. The texture is sandy loam, fine sandy loam, or sandy clay loam.

Pottsburg Series

The Pottsburg series consists of poorly drained, nearly level soils that formed in sandy marine sediments. These soils are in low areas of flatwoods. Slopes range from 0 to 2 percent. These soils are sandy, siliceous, thermic Grossarenic Alaquods.

Pottsburg soils are closely associated with Leon, Lynn Haven, Mandarin, Ridgewood, and Scranton soils. The poorly drained Lynn Haven soils are in landscape positions similar to those of the Pottsburg soils and have a spodic horizon within a depth of 30 inches. The poorly drained Leon and Scranton soils are in the slightly higher landscape positions. Leon soils have a spodic horizon within a depth of 30 inches. Scranton soils do not have a spodic horizon. The somewhat poorly drained Mandarin and Ridgewood soils are in the higher landscape positions. Mandarin soils have a spodic horizon within a depth of 30 inches. Ridgewood soils do not have a spodic horizon.

Typical pedon of Pottsburg fine sand; in slash pine plantation, about 200 feet east and 600 feet north of the southwest corner of sec. 19, T. 6 S., R. 11 W.

A—0 to 6 inches; very dark gray (10YR 3/1) fine sand; weak fine granular structure; very friable; very strongly acid; clear wavy boundary.
E1—6 to 13 inches; light brownish gray (10YR 6/2) fine sand; single grained; loose; very strongly acid; gradual wavy boundary.
E2—13 to 53 inches; light gray (10YR 7/1) fine sand; single grained; loose; strongly acid; abrupt wavy boundary.
Bh1—53 to 67 inches; dark brown (10YR 3/3) fine sand; single grained; loose; extremely acid; clear wavy boundary.
Bh2—67 to 80 inches; grayish brown (10YR 5/2) fine sand; single grained; loose; strongly acid.

Reaction ranges from extremely acid to slightly acid throughout. The texture is sand or fine sand throughout.

The A horizon has hue of 10YR, value of 2 to 5, and chroma of 1 or 2; or it is neutral in hue and has value of 2 to 5.

The E horizon has hue of 10YR, value of 4 to 7, and chroma of 1 or 2.

The Bh horizon has hue of 5YR, value of 2 to 4, and chroma of 1 to 4; hue of 7.5YR, value of 3 to 5, and chroma of 1 to 4; or hue of 10YR, value of 2 to 5, and chroma of 1 to 4; or it is neutral in hue and has value of 2. Sand grains in this horizon are well coated with organic matter and are weakly cemented in parts.

Rains Series

The Rains series consists of poorly drained, nearly level soils that formed in sandy and loamy marine sediments (fig. 19). These soils are on low flats. Slopes range from 0 to 2 percent. These soils are fine-loamy, siliceous, thermic Typic Paleaquults.

Rains soils are closely associated with Alapaha, Bladen, Meggett, Pelham, Plummer, and Surrency soils. The very poorly drained Bayboro and Surrency soils are in the lower landscape positions. Bayboro soils are more than 35 percent clay. Surrency soils are arenic. The poorly drained Bladen, Meggett, Pelham, and Plummer soils are in landscape position similar to those of the Rains soils. Bladen and Meggett soils are more than 35 percent clay. Meggett soils have a base saturation of more than 35 percent in the argillic horizon. Pelham soils are arenic. Plummer soils are grossarenic. The poorly drained Alapaha soils are in the slightly higher landscape positions and are arenic and plinthic.

Typical pedon of Rains fine sandy loam; in a pine plantation, about 600 feet north and 1,400 feet east of the southwest corner of sec. 10, T. 5 S., R. 11 W.

Ap—0 to 9 inches; very dark grayish brown (10YR 3/2) fine sandy loam; weak fine granular structure; very friable; strongly acid; abrupt smooth boundary.
Eg—9 to 21 inches; light gray (10YR 6/1) fine sandy loam; many fine and medium prominent brownish yellow (10YR 5/6) and strong brown (7.5YR 5/8) mottles; weak fine and medium subangular blocky structure; very friable; strongly acid; clear wavy boundary.
Btg1—21 to 36 inches; gray (10YR 5/1) sandy loam; many fine and medium prominent reddish yellow (7.5YR 6/6) and strong brown (7.5YR 4/6) mottles; moderate medium subangular blocky structure; friable; strongly acid; gradual wavy boundary.
Btg2—36 to 60 inches; gray (N 5/0) sandy clay loam; many medium and coarse prominent yellowish red (5YR 5/6), reddish yellow (7.5YR 6/8), and red (2.5YR 5/8) mottles; moderate medium and coarse subangular blocky structure; friable; strongly acid; gradual wavy boundary.
Btg3—60 to 80 inches; gray and dark gray (5Y 5/1) sandy clay loam; many medium prominent strong brown (7.5YR 5/6) and brownish yellow (10YR 6/6) mottles; weak coarse subangular blocky structure; friable; strongly acid.

The solum is more than 60 inches thick. Reaction ranges from extremely acid to slightly acid in the A and E horizons and in the upper part of the Bt horizon. It is extremely acid to strongly acid in the lower part of the Bt horizon.

The A or Ap horizon has hue of 10YR, value of 2 to 4, and chroma of 1 or 2.

The Eg horizon has hue of 10YR, value of 4 to 6, and chroma of 1. In some pedons it has higher chroma mottles. The texture is fine sand, loamy fine sand, sandy loam, or fine sandy loam.

The Btg horizon has hue of 10YR to 5Y, value of 4 to 6, and chroma of 1; or it is neutral in hue and has value of 4 to 6. It commonly has few to many higher chroma mottles. The texture is sandy loam, fine sandy loam, sandy clay loam, or clay loam.

Resota Series

The Resota series consists of moderately well drained, nearly level to gently sloping soils that formed in sandy marine deposits. These soils are on coastal ridges and remnant dunes. Slopes range from 0 to 5 percent. These soils are thermic, uncoated Spodic Quartzipsamments.

Resota soils are closely associated with Corolla,

Duckston, Kureb, Leon, Mandarin, and Newhan soils. Corolla, Duckston, and Newhan soils do not have a B horizon. Mandarin and Leon soils have a thick, dark spodic horizon. The excessively drained Kureb and Newhan soils are in the higher landscape positions. The somewhat poorly drained Corolla and Mandarin soils are in the lower landscape positions. The poorly drained Duckston and Leon soils are in the lowest landscape positions.

Typical pedon of Resota fine sand, 0 to 5 percent slopes; about 1,050 feet west and 50 feet north of the southeast corner of sec. 32, T. 7 S., R. 10 W.

Ap—0 to 5 inches; light gray (10YR 6/1) rubbed fine sand; single grained; loose; salt-and-pepper appearance on the surface; slightly acid; clear wavy boundary.

E—5 to 15 inches; white (10YR 8/1) fine sand; single grained; loose; slightly acid; abrupt wavy boundary.

Bw1—15 to 19 inches; strong brown (10YR 5/6) fine sand; single grained; loose; slightly acid; abrupt wavy boundary.

Bw2—19 to 40 inches; light yellowish brown (10YR 6/4) fine sand; loose; single grained; slightly acid; abrupt wavy boundary.

C1—40 to 65 inches; white (10YR 8/1) fine sand; loose; single grained; slightly acid; abrupt wavy boundary.

C2—65 to 80 inches; white (10YR 8/1) fine sand; loose; single grained; slightly acid.

The thickness of the solum ranges from 40 to 80 inches. Reaction ranges from extremely acid to slightly acid throughout. The texture is sand or fine sand throughout.

The A or Ap horizon has hue of 10YR, value of 4 to 6, and chroma of 1 or 2. If unrubbed, this horizon has a salt-and-pepper appearance.

The E horizon has hue of 10YR, value of 7 or 8, and chroma of 1 or 2.

The Bw horizon has hue of 10YR or 7.5YR, value of 5 to 7, and chroma of 4 to 8.

The C horizon has hue of 10YR, value of 7 or 8, and chroma of 1 or 2.

Ridgewood Series

The Ridgewood series consists of somewhat poorly drained, nearly level soils that formed in sandy marine sediments. These soils are on knolls in areas of flatwoods and on low uplands. Slopes range from 0 to 3 percent. These soils are thermic, uncoated Aquic Quartzipsamments.

Ridgewood soils are closely associated with Mandarin, Ortega, Pottsburg, and Scranton soils. Mandarin soils have a spodic horizon and are in positions similar to those of the Ridgewood soils. The poorly drained Pottsburg and Scranton soils are in the lower landscape positions. Pottsburg soils have a spodic horizon at a depth of 50 to 80 inches. Scranton soils have a thicker A horizon than that of the Ridgewood soils. The moderately well drained Ortega soils are in the higher landscape positions.

Typical pedon of Ridgewood fine sand; in an area of flatwoods, west of Depot Creek along Highway 98, about 150 feet south and 1,600 feet west of the northeast corner of sec. 29, T. 8 S., R. 10 W.

Ap—0 to 5 inches; dark grayish brown (10YR 4/2) fine sand; weak fine granular structure; very friable; moderately acid; clear wavy boundary.

C1—5 to 22 inches; brownish yellow (10YR 6/6) fine sand; single grained; loose; strongly acid; clear wavy boundary.

C2—22 to 27 inches; brownish yellow (10YR 6/8) fine sand; single grained; loose; strongly acid; gradual wavy boundary.

C3—27 to 39 inches; brownish yellow (10YR 6/8) fine sand; few medium faint yellowish brown (10YR 5/6) and light gray (10YR 7/2) mottles; single grained; loose; strongly acid; clear wavy boundary.

C4—39 to 80 inches; white (10YR 8/1) fine sand; few medium distinct light brownish gray (10YR 6/2) and few medium prominent strong brown (7.5YR 5/8) mottles; single grained; loose; moderately acid.

Reaction ranges from very strongly acid to neutral throughout. The texture is sand or fine sand throughout.

The A or Ap horizon has hue of 10YR, value of 4 or 5, and chroma of 1 or 2.

The C horizon has hue of 10YR, value of 5 to 8, and chroma of 2 to 8. Common gray and brownish yellow mottles begin at a depth of 24 to 40 inches. In some pedons a few gray mottles are within a depth of 20 inches.

Rutlege Series

The Rutlege series consists of very poorly drained soils that formed in sandy coastal plain sediments. These soils are in depressions. Slopes are less than 2 percent. These soils are sandy, siliceous, thermic Typic Humaquepts.

Rutlege soils are closely associated with Bayvi, Croatan, Leon, Lynn Haven, Pamlico, Pickney, and Scranton soils. The very poorly drained Bayvi soils are in the slightly lower landscape positions in tidal marshes and have a base saturation of more than 35 percent. The very poorly drained Croatan, Pamlico, and Pickney soils are in landscape positions similar to those of the Rutlege soils. Pickney soils have an

A horizon that is more than 24 inches thick. Croatan and Pamlico soils are organic soils. The poorly drained Leon, Lynn Haven, and Scranton soils are in the higher landscape positions and have a thinner A horizon than that of the Rutlege soils. Leon and Lynn Haven soils have a spodic horizon.

Typical pedon of Rutlege fine sand in an area of Pickney and Rutlege soils, depressional; about 420 feet east and 2,240 feet north of the southwest corner of sec. 13, T. 7 S., R. 11 W.

A—0 to 19 inches; black (10YR 2/1) fine sand; weak medium granular structure; very friable; very strongly acid; gradual smooth boundary.

Cg1—19 to 39 inches; light brownish gray (10YR 6/2) fine sand; single grained; many coarse distinct very dark grayish brown (10YR 3/2) pockets of organic material; very strongly acid; gradual wavy boundary.

Cg2—39 to 44 inches; grayish brown (10YR 5/2) fine sand; single grained; loose; very strongly acid; gradual wavy boundary.

Cg3—44 to 65 inches; gray (10YR 5/1) fine sand; single grained; loose; very strongly acid; gradual wavy boundary.

Cg4—65 to 80 inches; dark gray (5Y 4/1) fine sand and thin strata of loamy fine sand; single grained; loose; strongly acid.

Reaction ranges from extremely acid to strongly acid throughout.

The A horizon has hue of 10YR, value of 2 or 3, and chroma of 1 or 2.

The Cg horizon has hue of 10YR or 5Y, value of 4 to 6, and chroma of 1 or 2. The texture is sand, fine sand, or loamy sand.

Sapelo Series

The Sapelo series consists of poorly drained, nearly level soils that formed in sandy and loamy marine sediments. These soils are in areas of flatwoods. Slopes range from 0 to 2 percent. These soils are sandy, siliceous, thermic Ultic Alaquods.

Sapelo soils are closely associated with Alapaha, Albany, Leefield, Leon, Pelham, and Plummer soils. The poorly drained Leon soils are in landscape positions similar to those of the Sapelo soils and do not have an argillic horizon. The poorly drained Alapaha, Plummer, and Pelham soils are in the slightly lower landscape positions and do not have a spodic horizon. Alapaha, Leefield, and Pelham soils have an argillic horizon at a depth of 20 to 40 inches. The somewhat poorly drained Albany and Leefield soils are in the higher landscape positions and do not have a spodic horizon.

Typical pedon of Sapelo sand; in a slash pine plantation, about 1,500 feet south and 200 feet west of the northeast corner of sec. 30, T. 4 S., R. 11 W.

A—0 to 6 inches; very dark gray (10YR 3/1) sand; weak fine granular structure; very friable; very strongly acid; clear wavy boundary.

E—6 to 12 inches; grayish brown (10YR 5/2) sand; single grained; loose; very strongly acid; abrupt smooth boundary.

Bh1—12 to 15 inches; very dark grayish brown (10YR 3/2) sand; moderate medium subangular blocky structure; firm; very strongly acid; abrupt smooth boundary.

Bh2—15 to 17 inches; dark brown (7.5YR 3/2) sand; moderate medium subangular blocky structure; firm; very strongly acid; clear wavy boundary.

E´1—17 to 34 inches; pale brown (10YR 6/3) sand; many medium prominent yellowish red (5YR 5/8), strong brown (7.5 YR 5/6), reddish yellow (7.5 6/6), and light gray (10YR 7/2) mottles; single grained; loose; very strongly acid; gradual wavy boundary.

E´2—34 to 47 inches; light gray (10YR 7/2) sand; many medium prominent brownish yellow (10YR 6/6) and strong brown (7.5 5/6) mottles; single grained; loose; very strongly acid; clear wavy boundary.

Btg1—47 to 66 inches; light brownish gray (10YR 6/2) fine sandy loam; many medium and coarse prominent yellowish red (5YR 5/8), very pale brown (10YR 7/3), and yellowish brown (10YR 5/6) mottles; moderate medium subangular blocky structure; firm; very strongly acid; gradual wavy boundary.

Btg2—66 to 80 inches; gray (10YR 6/1) fine sandy loam; many medium and coarse distinct reddish yellow (7.5YR 6/8), brownish yellow (10YR 6/8), and light yellowish brown (10YR 6/4) mottles; weak medium subangular blocky structure; friable; very strongly acid.

The thickness of the solum ranges from 70 to more than 80 inches. Reaction ranges from extremely to strongly acid throughout, except where the A horizon has been limed.

The A horizon has hue of 10YR, value of 2 or 3, and chroma of 1 or 2; or it is neutral in hue and has value of 2. If unrubbed, it has a salt-and-pepper appearance.

The E horizon has hue of 10YR, value of 5 to 7, and chroma of 1 or 2. The texture is sand or fine sand.

The Bh horizon has hue of 10YR or 7.5YR, value of 3 or 4, and chroma of 2 or 3. The texture is sand, fine sand, or loamy fine sand.

The E´ horizon has hue of 10YR, value of 6 or 7, and chroma of 1 to 3. The texture is sand or fine sand.

The Btg horizon has hue of 10YR, value of 6 or 7,

and chroma of 1 or 2; or it has hue of 5Y, value of 6, and chroma of 1. The texture is dominantly sandy loam, fine sandy loam, or sandy clay loam. In some pedons, however, it is loamy fine sand or has lenses of loamy sand, sand, or loamy fine sand.

Scranton Series

The Scranton series consists of poorly drained, nearly level soils that formed in sandy marine sediments. These soils are in areas of flatwoods. Slopes are less than 2 percent. These soils are siliceous, thermic Humaqueptic Psammaquents.

Scranton soils are closely associated with Leon, Lynn Haven, Mandarin, Ridgewood, and Rutlege soils. The very poorly drained Rutlege soils are in the lower landscape positions and have an A horizon that ranges from 10 to 24 inches in thickness. The poorly drained Leon and Lynn Haven soils are in landscape positions similar to those of the Scranton soils. Leon, Lynn Haven, and Mandarin soils have a spodic horizon within a depth of 30 inches. The somewhat poorly drained Mandarin and Ridgewood soils are in the higher landscape positions.

Typical pedon of Scranton fine sand; in a pine plantation west of Howard Creek, about 1,100 feet east and 2,000 feet north of the southwest corner of sec. 6, T. 7 S., R. 8 W.

A—0 to 9 inches; very dark brown (10YR 2/2) fine sand; single grained; loose; slightly acid; clear smooth boundary.

Cg1—9 to 18 inches; dark gray (10YR 4/1) and brown (10YR 5/3) fine sand; common medium prominent yellowish brown (10YR 5/6) mottles; single grained; loose; strongly acid; gradual smooth boundary.

Cg2—18 to 40 inches; grayish brown (10YR 5/2) and dark gray (10YR 4/1) fine sand; common medium distinct yellowish brown (10YR 5/4) mottles; single grained; loose; very strongly acid; gradual smooth boundary.

Cg3—40 to 50 inches; light brownish gray (10YR 6/2) and gray (10YR 5/1) fine sand; coarse fine prominent yellowish brown (10YR 5/6) and light yellowish brown (10YR 6/4) mottles; single grained; loose; very strongly acid; gradual smooth boundary.

Cg4—50 to 80 inches; gray (N 6/0) fine sand and strata of loamy fine sand; single grained parting to massive; very friable; moderately acid.

Reaction is very strongly acid to slightly acid in the A horizon and from very strongly acid to moderately acid throughout the rest of the profile.

The A horizon has hue of 10YR, value of 2 or 3, and chroma of 1 or 2.

The upper part of the Cg horizon has hue of 10YR or 2.5Y, value of 4 or 5, and chroma of 1 or 2. The lower part has hue of 10YR or 2.5Y, value of 5 to 8, and chroma of 2; or it is neutral in hue and has value of 5 to 8. The Cg horizon has mottles in shades of brown and yellow. The texture is sand, fine sand, or loamy fine sand.

Stilson Series

The Stilson series consists of moderately well drained, nearly level soils that formed in sandy and loamy marine sediments. These soils are on uplands. Slopes range from 0 to 3 percent. These soils are loamy, siliceous, thermic Arenic Plinthic Paleudults.

Stilson soils are closely associated with Alapaha, Blanton, Clarendon, Dothan, Fuquay, Leefield, Ocilla, Lucy, and Plummer soils. The well drained Dothan, Fuquay, and Lucy soils are in the higher landscape positions. Dothan soils have an argillic horizon within a depth of 20 inches. Lucy soils have less than 5 percent plinthite. The moderately well drained Blanton soils are in landscape positions similar to those of the Stilson soils and have less than 5 percent plinthite. The somewhat poorly drained Albany, Clarendon, Leefield, and Ocilla soils are in the lower landscape positions. Albany soils have an argillic horizon at a depth of more than 40 inches and have less than 5 percent plinthite. Clarendon soils have an argillic horizon within a depth of 20 inches. Ocilla soils have less than 5 percent plinthite. The poorly drained Plummer soils are in the lower landscape positions, have an argillic horizon at a depth of more than 40 inches, and have less than 5 percent plinthite.

Typical pedon of Stilson loamy fine sand, 0 to 5 percent slopes; west of Wewahitchka, about 1,250 feet west and 500 feet north of the southeast corner of sec. 22, T. 4 S., R. 10 W.

Ap—0 to 6 inches; dark grayish brown (10YR 4/2) loamy fine sand; weak fine granular structure; very friable; strongly acid; abrupt smooth boundary.

E1—6 to 10 inches; yellowish brown (10YR 5/4) loamy fine sand; single grained; loose; strongly acid; clear wavy boundary.

E2—10 to 25 inches; yellowish brown (10YR 5/6) loamy fine sand; single grained; loose; about 1 percent ironstone nodules; strongly acid; clear wavy boundary.

Bt—25 to 32 inches; yellowish brown (10YR 5/6) fine sandy loam; common fine and medium distinct strong brown (7.5YR 5/6) and very pale brown

(10YR 7/3) mottles; weak medium subangular blocky structure; very friable; about 2 percent ironstone nodules; very strongly acid; clear wavy boundary.

Btv1—32 to 45 inches; light yellowish brown (2.5YR 6/4) fine sandy loam; common medium prominent light gray (2.5YR 7/2), brownish yellow (10YR 6/6), and reddish yellow (7.5YR 6/8) mottles; moderate medium subangular blocky structure; friable; 10 percent plinthite and 2 percent ironstone nodules; very strongly acid; clear wavy boundary.

Btv2—45 to 61 inches; light yellowish brown (2.5YR 6/4) fine sandy loam; many medium and coarse prominent light reddish brown (5YR 6/3), yellowish red (5YR 5/6), strong brown (7.5YR 5/6), and light gray (2.5Y 7/2) mottles; moderate medium subangular blocky structure; friable; 5 percent plinthite; very strongly acid; gradual wavy boundary.

B´t—61 to 80 inches; prominently mottled light gray (10YR 7/2), strong brown (7.5YR 5/8), light reddish brown (5YR 6/4), and red (2.5YR 4/8) sandy clay loam; moderate medium subangular blocky structure; friable; very strongly acid.

The thickness of the solum ranges from 72 to more than 80 inches. Reaction is very strongly acid or strongly acid throughout, except where the A horizon has been limed.

The A or Ap horizon has hue of 10YR, value of 4, and chroma of 1 or 2; or it has hue of 2.5Y, value of 4, and chroma of 2.

The E horizon has hue of 10YR, value of 5 or 6, and chroma of 4 to 8; or it has hue of 2.5Y, value of 6, and chroma of 4. The texture is fine sand or loamy fine sand.

The Bt, B´t, and Btv horizons have hue of 10YR or 2.5Y, value of 4 to 7, and chroma of 4 to 8. The upper part of the Bt horizon is mottled in shades of gray or brown. Gray mottles begin 5 to 14 inches below the top of the argillic horizon. The lower horizons are mottled in shades of gray, brown, or red. The Bt, B´t, Btv horizons are fine sandy loam, sandy loam, or sandy clay loam.

Surrency Series

The Surrency series consists of very poorly drained, nearly level soils that formed in sandy and loamy marine and fluvial sediments. These soils are in shallow depressions and swamps along rivers and streams. Slopes generally are less than 1 percent. These soils are loamy, siliceous, thermic Arenic Umbric Paleaquults.

Surrency soils are closely associated with Bayboro, Croatan, Pantego, Pelham, and Plummer soils. The very poorly drained Bayboro and Pantego soils are in landscape positions similar to those of the Surrency soils and have an argillic horizon within a depth of 20 inches. Also, Bayboro soils are more than 35 percent clay. The very poorly drained Croatan soils are in the slightly lower landscape positions and are organic soils. The poorly drained Pelham and Plummer soils are in the higher landscape positions. Plummer soils have an argillic horizon at a depth of more than 40 inches.

Typical pedon of Surrency mucky fine sand, depressional; near Port St. Joe, about 850 feet west and 1,300 feet north of the southeast corner of sec. 17, T. 7 S., R. 11 W.

A—0 to 18 inches; black (10YR 2/1) mucky fine sand; weak medium granular structure; slightly sticky; very strongly acid; clear wavy boundary.

Eg—18 to 34 inches; dark grayish brown (10YR 4/2) loamy fine sand and lenses of black (10YR 2/1) mucky loamy fine sand; weak medium granular structure; slightly sticky; very strongly acid; abrupt smooth boundary.

Btg1—34 to 65 inches; dark grayish brown (10YR 4/2) sandy loam; weak medium subangular blocky structure; sticky; strongly acid; gradual wavy boundary.

Btg2—65 to 80 inches; gray (10YR 5/1) sandy loam; weak coarse subangular blocky structure; sticky; strongly acid.

Reaction ranges from extremely acid to strongly acid throughout.

The A horizon has hue of 10YR to 5Y, value of 2 or 3, and chroma of 1 or 2.

The Eg horizon has hue of 10YR or 2.5Y, value of 4 to 7, and chroma of 1 or 2. The number of mottles in shades of brown, yellow, or gray ranges from none to common. The texture is dominantly sand, fine sand, or loamy fine sand.

The Btg horizon has hue of 10YR or 2.5Y, value of 4 to 7, and chroma of 1 or 2. The number of mottles in shades of brown, yellow, or gray ranges from none to common. The texture is dominantly sandy loam, fine sandy loam, or sandy clay loam.

Wahee Series

The Wahee series consists of somewhat poorly drained, nearly level soils that formed in clayey marine and fluvial sediments. These soils are on terraces near the flood plain along the Apalachicola River. Slopes range from 0 to 2 percent. These soils are clayey, mixed, thermic Aeric Endoaquults.

Wahee soils are closely associated with Bladen,

Eulonia, Kenansville, and Meggett soils. The poorly drained Bladen and Meggett soils are in the lower landscape positions. Meggett soils have a base saturation of more than 35 percent. The somewhat poorly drained Eulonia soils are in the higher landscape positions. The moderately well drained Kenansville soils are in the much higher landscape positions and have an argillic horizon at a depth of 20 to 40 inches.

Typical pedon of Wahee fine sandy loam; east of the Dead Lakes, about 1,000 feet south and 1,000 west of the northeast corner of sec. 32, T. 3 S., R. 9 W.

A—0 to 5 inches; dark grayish brown (10YR 4/2) fine sandy loam; moderate medium granular structure; very friable; strongly acid; clear wavy boundary.

E—5 to 12 inches; light yellowish brown (2.5Y 6/4) loamy fine sand; moderate medium granular structure; very friable; strongly acid; clear wavy boundary.

Bt—12 to 43 inches; light yellowish brown (2.5Y 6/4) sandy clay; common medium prominent yellowish red (5YR 5/8) and few fine distinct light brownish gray (10YR 6/2) mottles; strong medium subangular blocky structure; friable; strongly acid; clear wavy boundary.

Btg—43 to 72 inches; light gray (5Y 7/1) sandy clay; common medium prominent red (2.5Y 4/8) and brownish yellow (10YR 6/2) mottles; strong medium subangular blocky structure; friable; very strongly acid; abrupt wavy boundary.

Cg—72 to 80 inches; grayish brown (10YR 5/2) sandy loam; common medium distinct light brownish gray (10YR 6/2) mottles; massive; friable; very strongly acid.

The thickness of the solum ranges from 40 to more than 60 inches. Reaction ranges from very strongly acid to moderately acid in the A and E horizons, except where the A horizon has been limed, and is extremely acid or strongly acid in the Bt and C horizons.

The A horizon has hue of 10YR, value of 3 or 4, and chroma of 1 or 2.

The E horizon has hue of 10YR or 2.5Y, value of 5 or 6, and chroma of 2 to 4. In some pedons it has mottles in shades of gray, yellow, or brown. The texture is loam, fine sandy loam, or loamy fine sand.

The upper part of the Bt horizon has hue of 10YR or 2.5Y, value of 5 to 7, and chroma of 2 to 4. It has mottles in shades of gray, yellow, brown, or red. The texture is clay, clay loam, or sandy clay.

The Btg horizon or the lower part of the Bt horizon, if it occurs, has hue of 10YR to 5Y, value of 4 to 7, and chroma of 1 or 2. It has mottles in shades of yellow, brown, or red. The texture is clay, clay loam, or sandy clay.

The Cg horizon, if it occurs, has hue of 10YR to 5Y, value of 5 to 7, and chroma of 2; or it is neutral in hue and has value of 5 to 7. It has mottles in shades of yellow, brown, or red. The texture is variable.

Formation of the Soils

This section describes the factors involved in the formation of soils, the process of horizon differentiation, and the geomorphology and geology of the county.

Factors of Soil Formation

Soil is a natural body at or near the earth's surface that has formed as a result of five major factors. These factors are parent material, climate, plants and animals, relief, and time. The physical, chemical, and biological properties of the soil result directly from the interaction of these factors.

Parent Material

Parent material is the geologic and biological material in which soils form. It determines the limits of the chemical and mineralogical composition of the soil.

Many of the soils in Gulf County formed in unconsolidated marine sediments of the Pleistocene and Recent geologic ages. Quartz sand and small amounts of marine clays and silts are parent materials that were once the components of sea bottoms, coastal bars, and spits. Plummer and Leon soils are examples of soils that formed in these unconsolidated marine sediments.

Some of the soils in the county formed in windblown sand. Examples are the Newhan soil, which is on recent coastal dunes, and the Kureb soil, which is on relict coastal dunes. Others soils, such as Brickyard and Meggett soils, formed in fluvial sediments on the flood plain along the Apalachicola River. These sediments were transported by the river and its tributaries from local landscapes and from the Piedmont and coastal plains in Georgia and Alabama. Some soils in the county formed primarily in decaying plant materials. The Maurepas soil is an example.

Climate

Gulf County has a humid subtropical climate. The average annual rainfall is about 68 inches. Winters are short and mild. The abundant rainfall and warm temperatures cause intense weathering of the parent materials and soils. As rainwater percolates through the soil, it carries soluble minerals downward. Warm temperatures accelerate the decomposition of organic matter at the surface of the soil. Thus, most of the moderately well drained to excessively drained soils in the county have a thin surface layer that has a low content of organic matter.

Plants and Animals

Plants and animals play a major role in the cycling of nutrients in the soil. Organic matter from the surface washes into the root zone of plants, which absorb nutrients for growth. Leaf litter and other plant material then falls to the ground, and the cycle begins again.

Many animals mix soil layers by burrowing. Soil layers can also be mixed when trees are uprooted by high winds. The process of mixing soil layers is called "pedoturbation." Plants and animals can also affect soils formation by transforming minerals through metabolic activities.

Relief

Relief has influenced soil formation in Gulf County primarily through its effect on the depth to the water table. Relatively high relief occurs mostly in the coastal areas where the topography is characterized by recent and relict dune swales. Generally, the soils on the crest and upper side slopes of coastal dunes do not have a water table within a depth of 72 inches. As a result, plant growth is sparse, little organic matter is generated, and the surface layer is thin and light colored. Further downslope, the soils have a progressively higher water table and plant growth is more lush. Also, the soils in the lower landscape positions have wetter conditions, which slow the rate of decomposition of organic matter and result in a thicker, darker surface layer.

Much of the county has very low relief. These areas have swamps because of slow surface drainage. The soils in these areas are wet and have a thick, dark surface layer.

Time

Although the other four factors of soil formation continually alter soil conditions, the changes they cause are not readily apparent in the course of a lifetime. Most of the chemical and physical properties of the soils in Gulf County resulted from hundreds or even thousands of years of formation. From the perspective of geologic time, however, most of these soils are relatively young.

The length of time that parent materials have been in place commonly is reflected in the degree of development of soil horizons. Soils of different ages in similar landscape positions show distinct differences in development. For example, the Newhan soil, which is on recent coastal dunes, has little profile development; whereas the Kureb soil, which is on similar landscape positions on older, relict dunes, has a prominent leached subsurface horizon that is underlain by a bright brownish yellow subsoil.

Processes of Horizon Differentiation

The five factors of soil formation result in horizon differentiation through four general processes. These processes are additions, losses, translocations, and transformations.

In Gulf County, additions are dominated by the accumulation of plant debris on the surface. This accumulation contributes to the content of organic matter in the topsoil. Some soils, especially areas of the Newhan and Corolla soils near coastal beaches, receive additions of windblown sands, which accumulate on the surface.

Carbonates and other soluble minerals are lost from the soils in the county as rainwater percolates down through and out of the soils. Erosion is the loss of soil material from the surface layer because of the force of water and wind. It is most prominent where surface-stabilizing natural vegetation has been removed or destroyed by human activities. It results in a thin A horizon and the exposure of the subsoil at the surface.

A common type of translocation in the county is the downward movement of clay particles and their subsequent accumulation in the subsoil. The argillic horizon in the Leefield soil is an example of the effect of the translocation of clay. Animals, especially ants and other insects, translocate soil material from the lower horizons to the surface layer. This type of activity commonly results in an indistinct boundary between the surface and subsurface layers.

The reduction and oxidation of iron are common transformations in the county. The zone in the soil where the water table fluctuates is mottled in shades of gray and red. These colors are indicative of reduced and oxidized forms of iron.

Geomorphology

Frank R. Rupert, Geological Survey, Bureau of Geology, Florida Department of Natural Resources, prepared this section.

Gulf County is situated in the Northern Zone geomorphic province, which includes the northern part of the Florida peninsula and the entire panhandle. Locally, the Northern Zone is divided into a series of geomorphic subzones based primarily on topographic elevation. The broad zone that encompasses all of Gulf County is the Gulf Coastal Lowlands.

The Gulf Coastal Lowlands geomorphic province is characterized by generally flat, sandy terrain and extends from the coast inland to the middle of Calhoun County. The northern limit of the province is at about 100 feet above mean sea level (MSL). The modern gulf coastline consists of well developed, quartz-sand beaches and spits, intermittently interrupted by marshy inlets and coves. Inland, the terrain consists of relict marine terrace deposits, sand dunes, ridges, bars, and river delta deposits occupied largely by poorly drained pine flatwoods and swamps.

The Apalachicola River is the largest river in Gulf County. It forms the northern two-thirds of the eastern boundary of the county (fig. 20). Most of the smaller streams in the county are tributaries to the Apalachicola River.

St. Joseph Bay is a nonestuarine lagoon formed between St. Joseph Spit and the mainland of the county. No major streams directly contribute freshwater to the bay. North to south, St. Joseph Bay is about 11 miles long. It ranges from 3 to 5 miles in width. The depth of St. Joseph Bay ranges from less than 5 feet at the southern (enclosed) end to about 30 feet near the northern tip of the spit. Bottom sediments are predominantly sand but include localized areas of clayey silt, silty sand, clayey sand, and mixtures of gravel and sand.

St. Joseph Spit is an elongated sand body formed by a bidirectional littoral drift system. The northern part of the spit is supplied by a southward transporting drift system. St. Joseph Spit is connected to the mainland by a 3-mile long arm that extends eastward from Cape San Blas. The spit bends sharply at Cape San Blas and extends about 15 miles northward in a gentle arc that is convex on the seaward side. Throughout its entire length, the spit is generally less than 1 mile wide. A series of relict sand beach ridges and intervening swales trend north-northwest across the

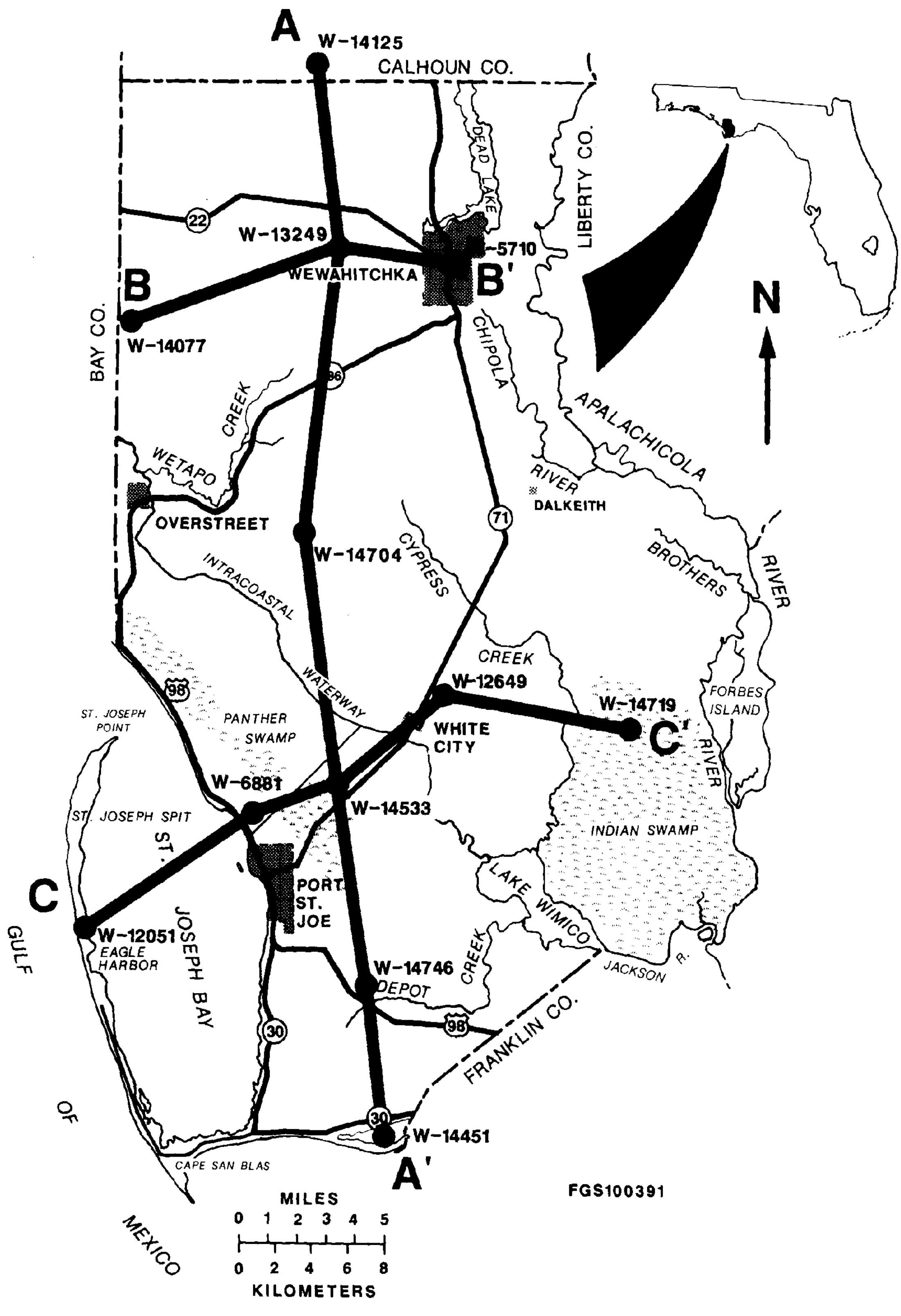

Figure 20.—Location of geological cross sections in Gulf County.

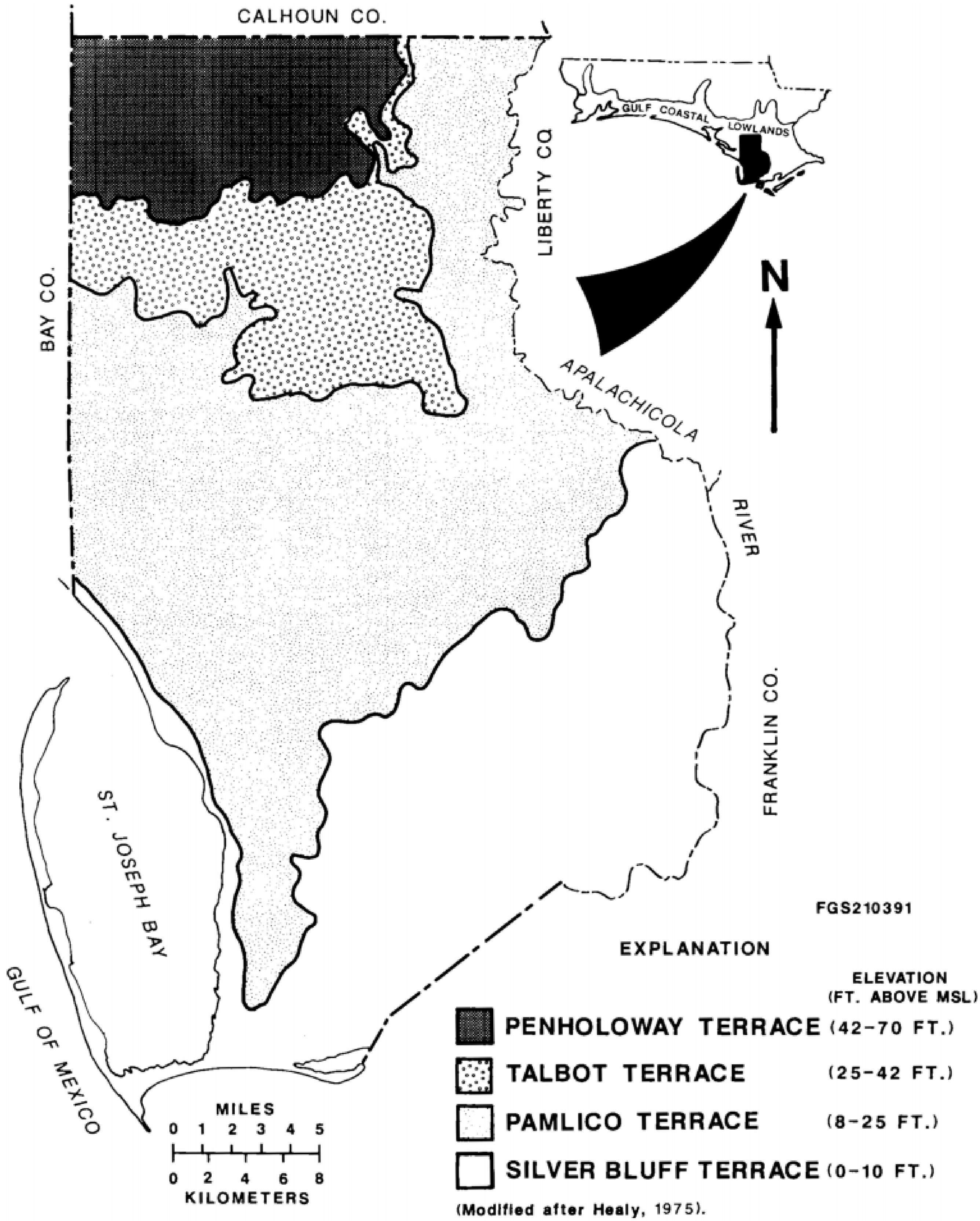

Figure 21.—Location and range in elevation of the marine terraces identified in Gulf County.

spit. Between Cape San Blas and the mainland, the ridge trend is nearly east to west. The remnant ridges range between 10 and 15 feet above MSL over most of the spit. Coastal eolian dunes, migrating over these old ridges, approach elevations of 50 feet above MSL at the northern end of the spit.

A white quartz-sand beach that is 50 to 100 feet in width and backed by eolian dunes borders the gulf side of the spit. A muddy sand beach of variable width borders the bay side. The dunes on the gulf side typically reach elevations of 30 feet above MSL. Eagle Harbor, which is midway along the spit, forms a natural cove on the bay side. This feature represents the remains of an ancient pass that once divided the spit into two islands.

Superimposed on the flat terrain of the Gulf Coastal Lowlands is a series of relict marine beach ridges, bars, spits, dune fields, and marine terraces. These terraces are steplike surfaces representing near-shore depositional plains that developed during former shoreline positions of high-standing Pleistocene seas. In Gulf County, four levels of marine terraces are recognized based on topographic elevation. In order of descending elevation, they are the Penholoway, Talbot, Pamlico, and Silver Bluff Terrace Zones (fig. 21).

Geology

Frank R. Rupert, Geological Survey, Bureau of Geology, Florida Department of Natural Resources, prepared this section.

The known sediments underlying Gulf County range in age from Paleozoic to Holocene. Undifferentiated Pleistocene and Holocene marine terrace sands and alluvium are the only deposits exposed at the surface. The county has shallow stratigraphy (fig. 22, 23, and 24).

Many of the strata of Eocene age and younger comprise important ground water aquifer systems. The following description of the stratigraphy of the county is confined to these younger formations.

The Ocala Limestone underlies most of Florida. In Gulf County, it lies below the depth attained by most water wells. The lithology of the Ocala limestone in the county is derived from oil test well samples. The lithology shown in these wells typically consists of cream and light brown, porous, bioclastic, fossiliferous limestone and dolomitic limestone. Fossils are generally abundant, especially species of the large foraminifera Lepidocyclina and Nummulites and Bryozoa, echinoids, mollusks, and algal fragments.

The depth to the top of the Ocala Group sediments varies throughout the county, but generally ranges from about 950 feet to 1,015 feet below land surface (BLS). Based on well data available from the Florida Geological Survey, the thickness of the Ocala Group ranges from about 350 feet under the north-central part of the county to about 530 feet under the southern edge of the county. The Ocala Group is unconformably overlain by the Oligocene Suwannee Limestone.

The Suwannee Limestone is an upper Oligocene marine carbonate unit. In Gulf County, the top of the Suwannee Limestone is at depths reached only by oil test wells, ranging between 700 and 750 feet BLS. The lithology consists of white, light gray, or yellowish gray, well indurated, chalky to sucrosic, fossiliferous limestone and dolomite. Mollusks, bryozoans, and foraminifera are common fossils in the Suwannee Limestone.

The Suwannee Limestone underlies much of Florida and is a major component of the Floridan aquifer system. It interfingers to the north with the Marianna Limestone, which is the only other Oligocene unit in the central part of the Florida panhandle. In Gulf County, the Suwannee Limestone is overlain by the lower Miocene St. Marks and Chattahoochee Formations and by the middle Miocene Bruce Creek Limestone.

The Miocene Epoch marked a change in the depositional regime of the Florida Platform. An influx of siliciclastic sediments, reworked and deposited by high-standing Miocene seas, covered the carbonates of earlier epochs. Throughout northern and peninsular Florida, the Miocene is represented by the siliciclastic and impure carbonate sediments of the Hawthorn Group. These units are commonly characterized by abundant marine phosphate deposits. In the central part of the Florida panhandle, a series of impure, fossiliferous, marine carbonate units were deposited during the Miocene. These include the lower Miocene Chattahoochee and St. Marks Formations and the middle Miocene Bruce Creek Limestone and Intracoastal Formation. The carbonates typically contain quartz sand and clay. In some places they contain phosphate. Most of the Miocene units in the panhandle dip and thicken westward into the Gulf of Mexico Sedimentary Basin. Localized thickening occurs in the area of the Apalachicola Embayment.

The St. Marks Formation includes the calcareous downdip facies that underlie portions of Wakulla and Franklin Counties to the east of Gulf County. Lithologically, the St. Marks Formation is a very pale orange, light gray, or white, well indurated, fossiliferous, marine calcarenitic limestone. In places, it is quartz-sandy and dolomitic. Mollusks and foraminifera are the common fossils in this formation. The mollusks commonly are molds. The formation commonly is indistinguishable in wells from the

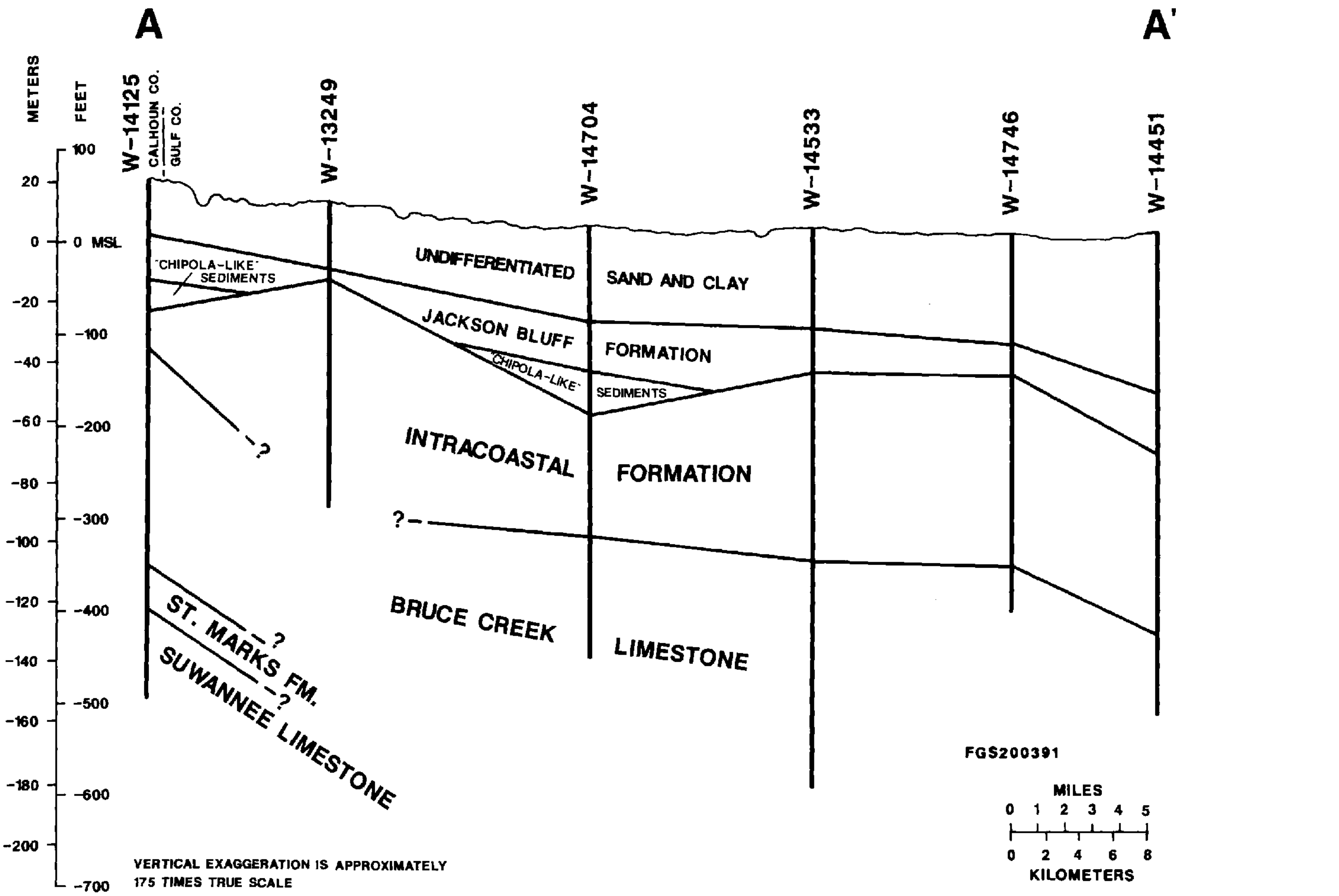

Figure 22.—Cross section of geologic materials at sites A to A´.

overlying middle Miocene Bruce Creek Limestone, particularly in the area from the central part of Franklin County westward. The St. Marks Formation occurs at the surface in the eastern part of Wakulla County. From where it occurs at the surface, it dips and thickens westward into the trough of the Apalachicola Embayment. It reaches a thickness of over 200 feet under the axis of the embayment.

The Chattahoochee Formation underlies parts of the north-central and western areas of the Florida panhandle, including the northern part of Gulf County. This unit differs from the St. Marks Formation, which is of an equivalent age, by being a dolomitic calcilutite or fossiliferous calcilutite.

Downdip in the vicinity of Gulf County, the St. Marks Formation, the Chattahoochee Formation, and in some areas, the overlying Bruce Creek Limestone are frequently altered by ground water to the extent of being indistinguishable. Thus, the formations are locally difficult to differentiate, even in cores, and the St. Marks and Chattahoochee Formations are described here as a single unit (the St. Marks Formation) in the geologic cross-sections.

The Bruce Creek Limestone is white, light gray, or yellowish gray, quartz-sandy, highly fossiliferous marine limestone underlying the south-central part of the Florida panhandle. It is commonly phosphatic. Foraminifera, echinoids, bryozoans, and mollusks are the predominant fossils. The unit is wedge shaped. It extends from the north-central part of Okaloosa County eastward to the western part of Wakulla County. In Gulf County, the Bruce Creek Limestone dips generally to the southwest, ranging in depth from about 150 feet BLS under the northern edge of the county to about 500 feet BLS under St. Joseph Spit. The thickness of the unit exceeds 200 feet under the county. The total range in thickness is difficult to determine because many wells do not penetrate the entire sequence. In wells that are deep enough, the basal Bruce Creek lithology is commonly

indistinguishable from the underlying units and a lower contact cannot be determined.

The Bruce Creek Limestone is overlain by the more fossiliferous and generally more calcarenitic Intracoastal Formation. In some wells in central part of the county, a thin, gray, clayey dolosilt occurs at the top of the Bruce Creek Limestone, delineating the contact between the Bruce Creek Limestone and the Intracoastal Formation.

The Intracoastal Limestone is soft, sandy, fossiliferous limestone of Pliocene age underlying the coastal area of western Florida. It underlies all of Gulf County. It reaches a maximum thickness of 300 feet in the southwestern part of the county.

Lithologically, the Intracoastal Formation is light gray or yellowish gray, glauconitic, phosphatic, highly fossiliferous marine limestone. In some places it is argillaceous. Microfossils are very abundant. Other fossils commonly include mollusks, echinoids, bryozoans, ostracods, and shark teeth. The depth to the Intracoastal Formation typically ranges from about 50 feet BLS in the northern part of the county to more than 200 feet BLS under St. Joseph Spit.

The Intracoastal Formation is middle Miocene to

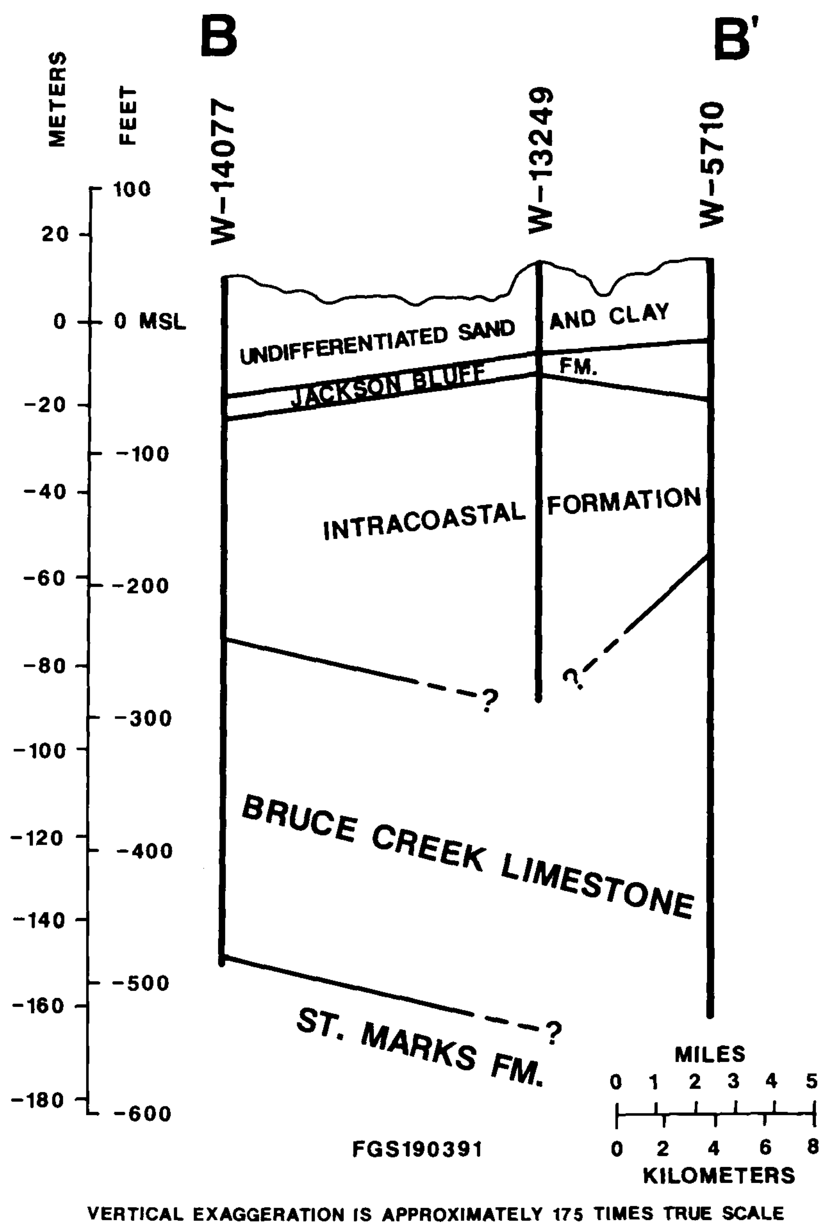

Figure 23.—Cross section of geologic materials at sites B to B´.

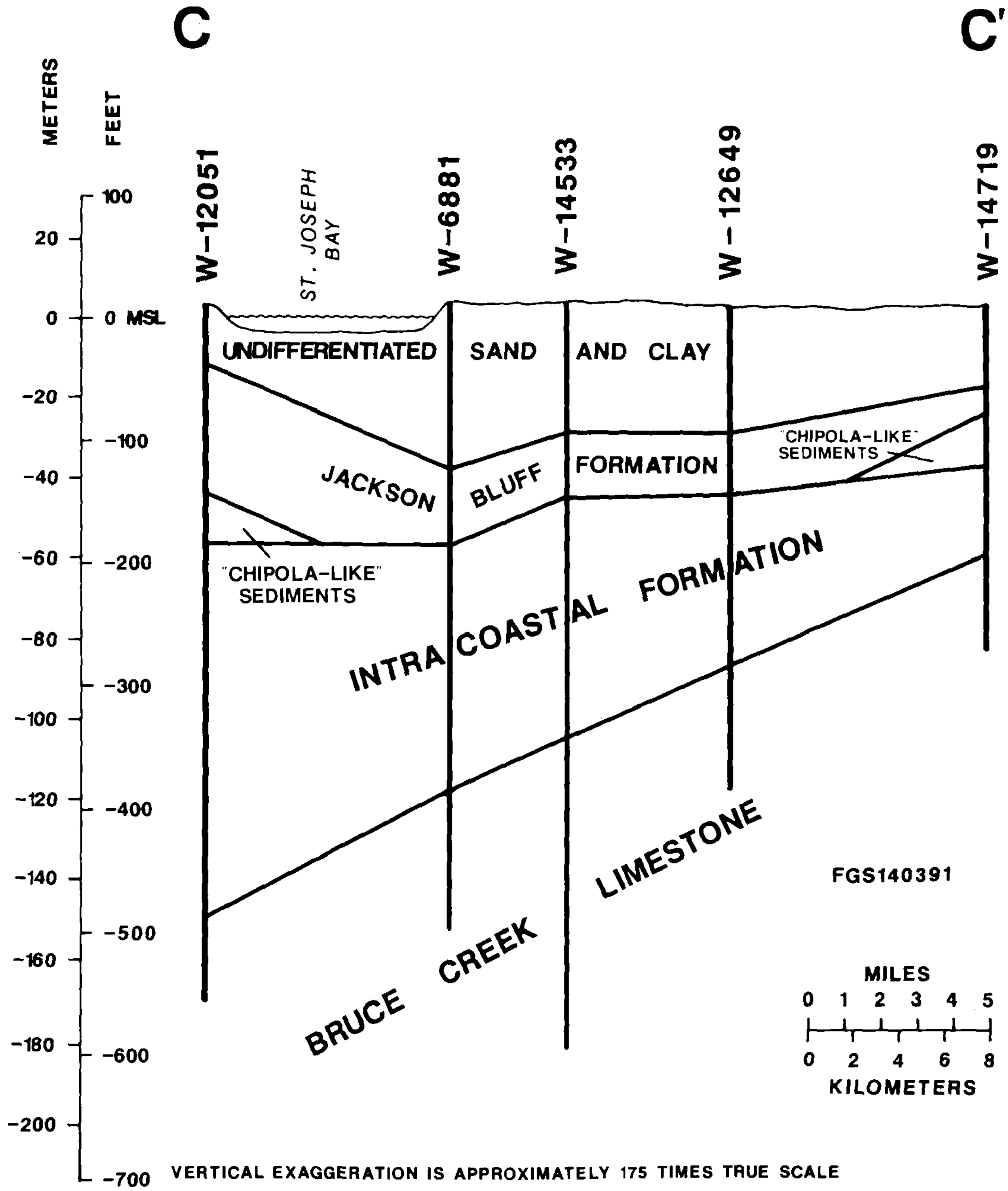

Figure 24.—Cross section of geologic materials at sites C to C´.

late Pliocene in age. A hiatus, which probably occurred in the late Miocene, separates the differently aged sections of the Intracoastal Formation.

The Intracoastal Formation is unconformably overlain by the “Chipola-like” sediments, Jackson Bluff Formation, or, in a few wells, by undifferentiated sediments of Pleistocene-Holocene age. In some areas, the Jackson Bluff and Intracoastal Formations may be of an equivalent age and grade into one another.

The sediments of the Chipola Formation consist of bluish gray or yellowish brown, fossiliferous molluscan marl. They occur only within the east-central area of the panhandle to the vicinity of the Apalachicola Embayment, including Bay, Calhoun, Liberty, and possibly Gulf Counties. Beds that have a lithology similar to the type Chipola Formation have been traced in cores into Gulf County from the north. Based solely on lithologic criteria, these “Chipola-like” sediments in the Chipola Formation are included. Due to insufficient

core coverage and a significant age discrepancy, some uncertainty exists as to whether the beds that have Chipola lithology in Gulf County are actually correlative with the type Chipola Formation to the north. Near the type area and at Alum Bluff in Liberty County, the Chipola Formation has been dated by microfossils as late early Miocene to early middle Miocene. Downdip in Gulf County, the “Chipola-like” unit is entirely in the subsurface and has not been directly dated. Dates obtained from microfossils in the underlying Intracoastal Formation, however, place the Intracoastal Formation in the early late Pliocene. The “Chipola-like” sediments must therefore be younger downdip than in the type area to the north; and, based on stratigraphic position, are late Pliocene. For this reason, these sediments in Gulf County are herein referred to as “Chipola-like” sediments.

Generally, the Chipola Formation grades downdip from the molluscan calcarenit of the type area to the yellowish gray and light gray, quartz-sandy, fossiliferous limestone of the “Chipola-like” beds in Gulf County. It occurs sporadically in wells, possibly as erosional remnants, and does not underlie all of Gulf County. The “Chipola-like” sediments generally range from about 80 to 140 feet BLS under Gulf County. The thickness of the unit ranges from 0 to about 50 feet.

The Jackson Bluff Formation is named after Jackson Bluff on the Ochlockonee River in the western part of Leon County, Florida. In Gulf County, the Jackson Bluff Formation consists of light gray or gray, poorly consolidated clayey sands and sandy clays containing abundant mollusk shells. It underlies most of the county, dipping and thickening to the southwest. The depth to the top of the unit ranges from about 5 feet BLS at the northern edge of the county to nearly 170 feet BLS at the southern tip of the county near Cape San Blas. The Jackson Bluff Formation ranges from 0 to 150 feet in thickness. It is missing primarily in the north-central and eastern parts of Gulf County and is thickest under the western and southern edges of the county. The Jackson Bluff Formation is overlain by undifferentiated sands and clays of Pleistocene-Holocene age.

The surface of Gulf County is blanketed by undifferentiated sands and clays of Pleistocene to Holocene age. These sediments consist principally of white, light gray, greenish gray brown, and pale orange sands, clayey sands, and sandy clays and, in the southern part of the county, massive clays. Many of the sands show crossbedding, and the different lithologies are typically interbedded. Shell beds also occur locally along the coastal part of the county. The undifferentiated sediments reach a thickness of more than 150 feet in the southern and southwestern parts of the county.

A series of undifferentiated red, limonite-rich clayey sands similar to the Citronelle Formation sediments are along the northern edge of Gulf County. These deposits may represent reworked sediments derived from the Citronelle Formation outcrop area to the north and west of the county.

The undifferentiated sands and clays forming the surficial sediments in the county are predominantly marine and alluvial in origin. Relict marine features, such as the stranded beach ridge systems that are situated inland from the modern gulf coast, were formed during the last sea-level highstand of the Pleistocene. Many of the sediments of Pleistocene and Holocene age may have been deposited at the edge of a migrating paleo-delta of the ancestral Apalachicola River.

Prior to the construction of the Jim Woodruff Dam on the Apalachicola River at the Georgia-Florida State line, the river provided significant input of siliciclastic sediment into the Gulf County area. Residual river levee and bar deposits of late Holocene age are common along the eastern edge of the county today. They are adjacent to the Apalachicola River and its tributaries.

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Glossary

AC soil. A soil having only an A and a C horizon. Commonly, such soil formed in recent alluvium or on steep, rocky slopes.

Aeration, soil. The exchange of air in soil with air from the atmosphere. The air in a well aerated soil is similar to that in the atmosphere; the air in a poorly aerated soil is considerably higher in carbon dioxide and lower in oxygen.

Aggregate, soil. Many fine particles held in a single mass or cluster. Natural soil aggregates, such as granules, blocks, or prisms, are called peds. Clods are aggregates produced by tillage or logging.

Alluvium. Material, such as sand, silt, or clay, deposited on land by streams.

Area reclaim (in tables). An area difficult to reclaim after the removal of soil for construction and other uses. Revegetation and erosion control are extremely difficult.

Association, soil. A group of soils geographically associated in a characteristic repeating pattern and defined and delineated as a single map unit.

Available water capacity (available moisture capacity). The capacity of soils to hold water available for use by most plants. It is commonly defined as the difference between the amount of soil water at field moisture capacity and the amount at wilting point. It is commonly expressed as inches of water per inch of soil. The capacity, in inches, in a 60-inch profile or to a limiting layer is expressed as:

Very low	0 to 3
Low	3 to 6
Moderate	6 to 9
High	9 to 12
Very high	more than 12

Base saturation. The degree to which material having cation-exchange properties is saturated with exchangeable bases (sum of Ca, Mg, Na, and K), expressed as a percentage of the total cation-exchange capacity.

Bedding planes. Fine stratifications, less than 5 millimeters thick, in unconsolidated alluvial, eolian, lacustrine, or marine sediments.

Bedrock. The solid rock that underlies the soil and other unconsolidated material or that is exposed at the surface.

Bench terrace. A raised, level or nearly level strip of earth constructed on or nearly on the contour, supported by a barrier of rocks or similar material, and designed to make the soil suitable for tillage and to prevent accelerated erosion.

Bisequum. Two sequences of soil horizons, each of which consists of an illuvial horizon and the overlying eluvial horizons.

Bottom land. The normal flood plain of a stream, subject to flooding.

Capillary water. Water held as a film around soil particles and in tiny spaces between particles. Surface tension is the adhesive force that holds capillary water in the soil.

Catena. A sequence, or “chain,” of soils on a landscape that formed in similar kinds of parent material but that have different characteristics as a result of differences in relief and drainage.

Cation. An ion carrying a positive charge of electricity. The common soil cations are calcium, potassium, magnesium, sodium, and hydrogen.

Cation-exchange capacity. The total amount of exchangeable cations that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. The term, as applied to soils, is synonymous with base-exchange capacity but is more precise in meaning.

Clay. As a soil separate, the mineral soil particles less than 0.002 millimeter in diameter. As a soil textural class, soil material that is 40 percent or more clay, less than 45 percent sand, and less than 40 percent silt.

Clay film. A thin coating of oriented clay on the surface of a soil aggregate or lining pores or root channels. Synonyms: clay coating, clay skin.

Climax vegetation. The stabilized plant community on a particular site. The plant cover reproduces itself and does not change so long as the environment remains the same.

Coarse fragments. If round, mineral or rock particles 2 millimeters to 25 centimeters (10 inches) in diameter; if flat, mineral or rock

particles (flagstone) 15 to 38 centimeters (6 to 15 inches) long.

Coarse textured soil. Sand or loamy sand.

Complex slope. Irregular or variable slope. Planning or establishing terraces, diversions, and other water-control structures on a complex slope is difficult.

Complex, soil. A map unit of two or more kinds of soil in such an intricate pattern or so small in area that it is not practical to map them separately at the selected scale of mapping. The pattern and proportion of the soils are somewhat similar in all areas.

Concretions. Grains, pellets, or nodules of various sizes, shapes, and colors consisting of concentrated compounds or cemented soil grains. The composition of most concretions is unlike that of the surrounding soil. Calcium carbonate and iron oxide are common compounds in concretions.

Conservation tillage. A tillage system that does not invert the soil and that leaves a protective amount of crop residue on the surface throughout the year.

Consistence, soil. The feel of the soil and the ease with which a lump can be crushed by the fingers. Terms commonly used to describe consistence are:

Loose.—Noncoherent when dry or moist; does not hold together in a mass.

Friable.—When moist, crushes easily under gentle pressure between thumb and forefinger and can be pressed together into a lump.

Firm.—When moist, crushes under moderate pressure between thumb and forefinger, but resistance is distinctly noticeable.

Plastic.—When wet, readily deformed by moderate pressure but can be pressed into a lump; will form a “wire” when rolled between thumb and forefinger.

Sticky.—When wet, adheres to other material and tends to stretch somewhat and pull apart rather than to pull free from other material.

Hard.—When dry, moderately resistant to pressure; can be broken with difficulty between thumb and forefinger.

Soft.—When dry, breaks into powder or individual grains under very slight pressure.

Cemented.—Hard; little affected by moistening.

Contour stripcropping. Growing crops in strips that follow the contour. Strips of grass or close-growing crops are alternated with strips of clean-tilled crops or summer fallow.

Control section. The part of the soil on which classification is based. The thickness varies among different kinds of soil, but for many it is that part of the soil profile between depths of 10 inches and 40 or 80 inches.

Corrosive. High risk of corrosion to uncoated steel or deterioration of concrete.

Cover crop. A close-growing crop grown primarily to improve and protect the soil between periods of regular crop production, or a crop grown between trees and vines in orchards and vineyards.

Cutbanks cave (in tables). The walls of excavations tend to cave in or slough.

Diversion (or diversion terrace). A ridge of earth, generally a terrace, built to protect downslope areas by diverting runoff from its natural course.

Drainage class (natural). Refers to the frequency and duration of periods of saturation or partial saturation during soil formation, as opposed to altered drainage, which is commonly the result of artificial drainage or irrigation but may be caused by the sudden deepening of channels or the blocking of drainage outlets. Seven classes of natural soil drainage are recognized:

Excessively drained.—Water is removed from the soil very rapidly. Excessively drained soils in Gulf County are sandy. Some are steep. All are free of the mottling related to wetness.

Well drained.—Water is removed from the soil readily, but not rapidly. It is available to plants throughout most of the growing season, and wetness does not inhibit growth of roots for significant periods during most growing seasons. Well drained soils are commonly medium textured. They are mainly free of mottling.

Moderately well drained.—Water is removed from the soil somewhat slowly during some periods. Moderately well drained soils are wet for only a short time during the growing season, but periodically they are wet long enough that most mesophytic crops are affected. They commonly have a slowly pervious layer within or directly below the solum or periodically receive high rainfall, or both.

Somewhat poorly drained.—Water is removed slowly enough that the soil is wet for significant periods during the growing season. Wetness markedly restricts the growth of mesophytic crops unless artificial drainage is provided. Somewhat poorly drained soils commonly have a slowly pervious layer, a high water table, additional water from seepage, nearly continuous rainfall, or a combination of these.

Poorly drained.—Water is removed so slowly that the soil is saturated periodically during the growing season or remains wet for long periods. Free water is commonly at or near the surface for long enough during the growing season that most mesophytic crops cannot be grown unless the soil is artificially

drained. The soil is not continuously saturated in layers directly below plow depth. Poor drainage results from a high water table, a slowly pervious layer within the profile, seepage, nearly continuous rainfall, or a combination of these.

Very poorly drained.—Water is removed from the soil so slowly that free water remains at or on the surface during most of the growing season. Unless the soil is artificially drained, most mesophytic crops cannot be grown. Very poorly drained soils are commonly level or depressed and are frequently ponded. Yet, where rainfall is high and nearly continuous, they can have moderate or high slope gradients.

Drainage, surface. Runoff, or surface flow of water, from an area.

Eluviation. The movement of material in true solution or colloidal suspension from one place to another within the soil. Soil horizons that have lost material through eluviation are eluvial; those that have received material are illuvial.

Eolian soil material. Earthy parent material accumulated through wind action; commonly refers to sandy material in dunes or to loess in blankets on the surface.

Erosion. The wearing away of the land surface by water, wind, ice, or other geologic agents and by such processes as gravitational creep.

Erosion (geologic)—Erosion caused by geologic processes acting over long geologic periods and resulting in the wearing away of mountains and the building up of such landscape features as flood plains and coastal plains. Synonym: natural erosion.

Erosion (accelerated)—Erosion much more rapid than geologic erosion, mainly as a result of the human or animal activities or of a catastrophe in nature, such as fire, that exposes the surface.

Excess fines (in tables). Excess silt and clay in the soil. The soil is not a source of gravel or sand for construction purposes.

Excess salt (in tables). Excess water-soluble salts in the soil restrict the growth of most plants.

Excess sulfur (in tables). An excessive amount of sulfur is in the soil. The sulfur causes extreme acidity if the soil is drained, and the growth of most plants is restricted.

Fallow. Cropland left idle in order to restore productivity through accumulation of moisture. Summer fallow is common in regions of limited rainfall where cereal grains are grown. The soil is tilled for at least one growing season for weed control and decomposition of plant residue.

Fast intake (in tables). The movement of water into the soil is rapid.

Fertility, soil. The quality that enables a soil to provide plant nutrients, in adequate amounts and in proper balance, for the growth of specified plants when light, moisture, temperature, tilth, and other growth factors are favorable.

Fibric soil material (peat). The least decomposed of all organic soil material. Peat contains a large amount of well preserved fiber that is readily identifiable according to botanical origin. Peat has the lowest bulk density and the highest water content at saturation of all organic soil material.

Field moisture capacity. The moisture content of a soil, expressed as a percentage of the ovendry weight, after the gravitational, or free, water has drained away; the field moisture content 2 or 3 days after a soaking rain; also called *normal field capacity, normal moisture capacity,* or *capillary capacity*.

Fine textured soil. Sandy clay, silty clay, or clay.

Flood plain. A nearly level alluvial plain that borders a stream and is subject to flooding unless protected artificially.

Foot slope. The inclined surface at the base of a hill.

Forb. Any herbaceous plant that is not a grass or a sedge.

Genesis, soil. The mode of origin of the soil. Refers especially to the processes or soil-forming factors responsible for the formation of the solum, or true soil, from the unconsolidated parent material.

Gleyed soil. Soil that formed under poor drainage, resulting in the reduction of iron and other elements in the profile and in gray colors and mottles.

Graded stripcropping. Growing crops in strips that grade toward a protected waterway.

Grassed waterway. A natural or constructed waterway, typically broad and shallow, seeded to grass as protection against erosion. Conducts surface water away from cropland.

Gravel. Rounded or angular fragments of rock up to 3 inches (2 millimeters to 7.6 centimeters) in diameter. An individual piece is a pebble.

Gravelly soil material. Material that is 15 to 50 percent, by volume, rounded or angular rock fragments, not prominently flattened, up to 3 inches (7.6 centimeters) in diameter.

Green manure crop (agronomy). A soil-improving crop grown to be plowed under in an early stage of maturity or soon after maturity.

Ground water (geology). Water filling all the unblocked pores of the material below the water table.

Gully. A miniature valley with steep sides cut by running water and through which water ordinarily runs only after rainfall. The distinction between a

gully and a rill is one of depth. A gully generally is an obstacle to farm machinery and is too deep to be obliterated by ordinary tillage; a rill is of lesser depth and can be smoothed over by ordinary tillage.

Hardpan. A hardened or cemented soil horizon, or layer. The soil material is sandy, loamy, or clayey and is cemented by iron oxide, silica, calcium carbonate, or other substance.

Hemic soil material (mucky peat). Organic soil material intermediate in degree of decomposition between the less decomposed fibric and the more decomposed sapric material.

Horizon, soil. A layer of soil, approximately parallel to the surface, having distinct characteristics produced by soil-forming processes. In the identification of soil horizons, an uppercase letter represents the major horizons. Numbers or lowercase letters that follow represent subdivisions of the major horizons. An explanation of the subdivisions is given in the "Soil Survey Manual." The major horizons of mineral soil are as follows:

O horizon.—An organic layer of fresh and decaying plant residue at the surface of a mineral soil.

A horizon.—The mineral horizon at or near the surface in which an accumulation of humified organic matter is mixed with the mineral material. Also, a plowed surface horizon, most of which was originally part of a B horizon.

E horizon.—The mineral horizon in which the main feature is loss of silicate clay, iron, aluminum, or some combination of these.

B horizon.—The mineral horizon below an O, A, or E horizon. The B horizon is, in part, a layer of transition from the overlying horizon to the underlying C horizon. The B horizon also has distinctive characteristics, such as accumulation of clay, sesquioxides, humus, or a combination of these; prismatic or blocky structure; redder or browner colors than those in the A horizon; or a combination of these. The combined A and B horizons are generally called the solum, or true soil. If a soil does not have a B horizon, the A horizon alone is the solum.

C horizon.—The mineral horizon or layer, excluding indurated bedrock, that is little affected by soil-forming processes and does not have the properties typical of the A or B horizon. The material of a C horizon may be either like or unlike that in which the solum formed. If the material is known to differ from that in the solum, an Arabic numeral, commonly a 2, precedes the letter C.

Cr horizon.—Soft, consolidated bedrock beneath the soil.

Humus. The well decomposed, more or less stable part of the organic matter in mineral soils.

Hydrologic soil groups. Refers to soils grouped according to their runoff-producing characteristics. The chief consideration is the inherent capacity of soil bare of vegetation to permit infiltration. The slope and the kind of plant cover are not considered but are separate factors in predicting runoff. Soils are assigned to four groups. In group A are soils having a high infiltration rate when thoroughly wet and having a low runoff potential. They are mainly deep, well drained, and sandy or gravelly. In group D, at the other extreme, are soils having a very slow infiltration rate and thus a high runoff potential. They have a claypan or clay layer at or near the surface, have a permanent high water table, or are shallow over nearly impervious bedrock or other material. A soil is assigned to two hydrologic groups if part of the acreage is artificially drained and part is undrained.

Illuviation. The movement of soil material from one horizon to another in the soil profile. Generally, material is removed from an upper horizon and deposited in a lower horizon.

Impervious soil. A soil through which water, air, or roots penetrate slowly or not at all. No soil is absolutely impervious to air and water all the time.

Infiltration. The downward entry of water into the immediate surface of soil or other material. This contrasts with percolation, which is movement of water through soil layers or material.

Infiltration capacity. The maximum rate at which water can infiltrate into a soil under a given set of conditions.

Infiltration rate. The rate at which water penetrates the surface of the soil at any given instant, usually expressed in inches per hour. The rate can be limited by the infiltration capacity of the soil or the rate at which water is applied at the surface.

Intake rate. The average rate of water entering the soil under irrigation. Most soils have a fast initial rate; the rate decreases with application time. Therefore, intake rate for design purposes is not a constant but is a variable depending on the net irrigation application. The rate of water intake, in inches per hour, is expressed as follows:

Less than 0.2	very low
0.2 to 0.4	low
0.4 to 0.75	moderately low
0.75 to 1.25	moderate
1.25 to 1.75	moderately high
1.75 to 2.5	high
More than 2.5	very high

Irrigation. Application of water to soils to assist in production of crops. Methods of irrigation are:
Basin.—Water is applied rapidly to nearly level plains surrounded by levees or dikes.
Border.—Water is applied at the upper end of a strip in which the lateral flow of water is controlled by small earth ridges called border dikes, or borders.
Controlled flooding.—Water is released at intervals from closely spaced field ditches and distributed uniformly over the field.
Corrugation.—Water is applied to small, closely spaced furrows or ditches in fields of close-growing crops or in orchards so that it flows in only one direction.
Drip (or trickle).—Water is applied slowly and under low pressure to the surface of the soil or into the soil through such applicators as emitters, porous tubing, or perforated pipe.
Furrow.—Water is applied in small ditches made by cultivation implements. Furrows are used for tree and row crops.
Sprinkler.—Water is sprayed over the soil surface through pipes or nozzles from a pressure system.
Subirrigation.—Water is applied in open ditches or tile lines until the water table is raised enough to wet the soil.
Wild flooding.—Water, released at high points, is allowed to flow onto an area without controlled distribution.

Karst (topography). The relief of an area underlain by limestone that dissolves in differing degrees, thus forming numerous depressions or small basins.

Leaching. The removal of soluble material from soil or other material by percolating water.

Liquid limit. The moisture content at which the soil passes from a plastic to a liquid state.

Loam. Soil material that is 7 to 27 percent clay particles, 28 to 50 percent silt particles, and less than 52 percent sand particles.

Low strength. The soil is not strong enough to support loads.

Medium textured soil. Very fine sandy loam, loam, silt loam, or silt.

Mineral soil. Soil that is mainly mineral material and low in organic material. Its bulk density is more than that of organic soil.

Minimum tillage. Only the tillage essential to crop production and prevention of soil damage.

Miscellaneous area. An area that has little or no natural soil and supports little or no vegetation.

Moderately coarse textured soil. Coarse sandy loam, sandy loam, or fine sandy loam.

Moderately fine textured soil. Clay loam, sandy clay loam, or silty clay loam.

Morphology, soil. The physical makeup of the soil, including the texture, structure, porosity, consistence, color, and other physical, mineral, and biological properties of the various horizons, and the thickness and arrangement of those horizons in the soil profile.

Mottling, soil. Irregular spots of different colors that vary in number and size. Mottling generally indicates poor aeration and impeded drainage. Descriptive terms are as follows: abundance—*few, common,* and *many*; size—*fine, medium,* and *coarse*; and contrast—*faint, distinct,* and *prominent*. The size measurements are of the diameter along the greatest dimension. *Fine* indicates less than 5 millimeters (about 0.2 inch); *medium*, from 5 to 15 millimeters (about 0.2 to 0.6 inch); and *coarse*, more than 15 millimeters (about 0.6 inch).

Muck. Dark, finely divided, well decomposed organic soil material. (See Sapric soil material.)

Munsell notation. A designation of color by degrees of the three simple variables—hue, value, and chroma. For example, a notation of 10YR 6/4 is a color with hue of 10YR, value of 6, and chroma of 4.

Neutral soil. A soil having a pH value between 6.6 and 7.3. (See Reaction, soil.)

Nutrient, plant. Any element taken in by a plant essential to its growth. Plant nutrients are mainly nitrogen, phosphorus, potassium, calcium, magnesium, sulfur, iron, manganese, copper, boron, and zinc obtained from the soil and carbon, hydrogen, and oxygen obtained from the air and water.

Open space. A relatively undeveloped green or wooded area provided mainly within an urban area to minimize feeling of congested living.

Organic matter. Plant and animal residue in the soil in various stages of decomposition.

Pan. A compact, dense layer in a soil that impedes the movement of water and the growth of roots. For example, *hardpan, fragipan, claypan, plowpan,* and *traffic pan*.

Parent material. The unconsolidated organic and mineral material in which soil forms.

Peat. Unconsolidated material, largely undecomposed organic matter, that has accumulated under excess moisture. (See Fibric soil material.)

Ped. An individual natural soil aggregate, such as a granule, a prism, or a block.

Pedon. The smallest volume that can be called “a soil.” A pedon is three dimensional and large enough to permit study of all horizons. Its area ranges from about 10 to 100 square feet (1 square meter to 10 square meters), depending on the variability of the soil.

Percolation. The downward movement of water through the soil.

Percs slowly (in tables). The slow movement of water through the soil adversely affects the specified use.

Permeability. The quality of the soil that enables water to move through the profile. Permeability is measured as the number of inches per hour that water moves through the saturated soil. Terms describing permeability are:

Very slow	less than 0.06 inch
Slow	0.06 to 0.2 inch
Moderately slow	0.2 to 0.6 inch
Moderate	0.6 inch to 2.0 inches
Moderately rapid	2.0 to 6.0 inches
Rapid	6.0 to 20 inches
Very rapid	more than 20 inches

Phase, soil. A subdivision of a soil series based on features that affect its use and management, such as slope, stoniness, and thickness.

pH value. A numerical designation of acidity and alkalinity in soil. (See Reaction, soil.)

Piping (in tables). Subsurface tunnels or pipelike cavities are formed by water moving through the soil.

Plasticity index. The numerical difference between the liquid limit and the plastic limit; the range of moisture content within which the soil remains plastic.

Plastic limit. The moisture content at which a soil changes from semisolid to plastic.

Plinthite. The sesquioxide-rich, humus-poor, highly weathered mixture of clay with quartz and other diluents. It commonly appears as red mottles, usually in platy, polygonal, or reticulate patterns. Plinthite changes irreversibly to an ironstone hardpan or to irregular aggregates on repeated wetting and drying, especially if it is exposed also to heat from the sun. In a moist soil, plinthite can be cut with a spade. It is a form of laterite.

Plowpan. A compacted layer formed in the soil directly below the plowed layer.

Ponding. Standing water on soils in closed depressions. Unless the soils are artificially drained, the water can be removed only by percolation or evapotranspiration.

Poor filter (in tables). Because of rapid permeability, the soil may not adequately filter effluent from a waste disposal system.

Poorly graded. Refers to a coarse grained soil or soil material consisting mainly of particles of nearly the same size. Because there is little difference in size of the particles, density can be increased only slightly by compaction.

Prescribed burning. Deliberately burning an area for specific management purposes, under the appropriate conditions of weather and soil moisture and at the proper time of day.

Productivity, soil. The capability of a soil for producing a specified plant or sequence of plants under specific management.

Profile, soil. A vertical section of the soil extending through all its horizons and into the parent material.

Rangeland. Land on which the potential climax vegetation is predominantly grasses, grasslike plants, forbs, or shrubs suitable for grazing or browsing. It includes natural grasslands, savannas, many wetlands, some deserts, tundras, and areas that support certain forb and shrub communities.

Reaction, soil. A measure of the acidity or alkalinity of a soil expressed in pH values. A soil that tests to pH 7.0 is described as precisely neutral in reaction because it is neither acid nor alkaline. The degrees of acidity or alkalinity, expressed as pH values, are:

Extremely acid	below 4.5
Very strongly acid	4.5 to 5.0
Strongly acid	5.1 to 5.5
Moderately acid	5.6 to 6.0
Slightly acid	6.1 to 6.5
Neutral	6.6 to 7.3
Slightly alkaline	7.4 to 7.8
Moderately alkaline	7.9 to 8.4
Strongly alkaline	8.5 to 9.0
Very strongly alkaline	9.1 and higher

Relief. The elevations or inequalities of a land surface, considered collectively.

Rill. A steep-sided channel resulting from accelerated erosion. A rill is generally a few inches deep and not wide enough to be an obstacle to farm machinery.

Rock fragments. Rock or mineral fragments having a diameter of 2 millimeters or more; for example, pebbles, cobbles, stones, and boulders.

Rooting depth (in tables). Shallow root zone. The soil is shallow over a layer that greatly restricts roots.

Root zone. The part of the soil that can be penetrated by plant roots.

Runoff. The precipitation discharged into stream channels from an area. The water that flows off the surface of the land without sinking into the soil is called surface runoff. Water that enters the soil before reaching surface streams is called ground-water runoff or seepage flow from ground water.

Saline soil. A soil containing soluble salts in an amount that impairs the growth of plants. A saline

soil does not contain excess exchangeable sodium.

Salinity. The electrical conductivity of a saturation extract is the standard measure of salinity. Electrical conductivity is related to the amount of salts that are more soluble than gypsum in the soil. It can also include a small contribution (up to 2 dS/m) from dissolved gypsum. The standard international unit of measure is decisiemens per meter (dS/m) corrected to a temperature of 25 degrees C. Millimhos per centimeter (mmhos/cm) is the same as dS/m and may be used. The following classes of salinity are used if the electrical conductivity has not been determined, but salinity is inferred. The classes, and electrical conductivity in dS/m, are:

Class 0—Nonsaline	0-2
Class 1—Very slighty saline	2-4
Class 2—Slightly saline	4-8
Class 3—Moderately saline	8-16
Class 4—Strongly saline	>16

Salty water (in tables). Water that is too salty for consumption by livestock.

Sand. As a soil separate, individual rock or mineral fragments from 0.05 millimeter to 2.0 millimeters in diameter. Most sand grains consist of quartz. As a soil textural class, a soil that is 85 percent or more sand and not more than 10 percent clay.

Sapric soil material (muck). The most highly decomposed of all organic soil material. Muck has the least amount of plant fiber, the highest bulk density, and the lowest water content at saturation of all organic soil material.

Seepage (in tables). The movement of water through the soil adversely affects the specified use.

Sequum. A sequence consisting of an illuvial horizon and the overlying eluvial horizon. (See Eluviation.)

Series, soil. A group of soils that have profiles that are almost alike, except for differences in texture of the surface layer or of the underlying material. All the soils of a series have horizons that are similar in composition, thickness, and arrangement.

Sheet erosion. The removal of a fairly uniform layer of soil material from the land surface by the action of rainfall and surface runoff.

Shrink-swell. The shrinking of soil when dry and the swelling when wet. Shrinking and swelling can damage roads, dams, building foundations, and other structures. It can also damage plant roots.

Silica. A combination of silicon and oxygen. The mineral form is called quartz.

Silica-sesquioxide ratio. The ratio of the number of molecules of silica to the number of molecules of alumina and iron oxide. The more highly weathered soils or their clay fractions in warm-temperate, humid regions, and especially those in the tropics, generally have a low ratio.

Silt. As a soil separate, individual mineral particles that range in diameter from the upper limit of clay (0.002 millimeter) to the lower limit of very fine sand (0.05 millimeter). As a soil textural class, soil that is 80 percent or more silt and less than 12 percent clay.

Sinkhole. A depression in the landscape where limestone has been dissolved.

Site index. A designation of the quality of a forest site based on the height of the dominant stand at an arbitrarily chosen age. For example, if the average height attained by dominant and codominant trees in a fully stocked stand at the age of 50 years is 75 feet, the site index is 75 feet.

Slope. The inclination of the land surface from the horizontal. Percentage of slope is the vertical distance divided by horizontal distance, then multiplied by 100. Thus, a slope of 20 percent is a drop of 20 feet in 100 feet of horizontal distance.

Slope (in tables). Slope is great enough that special practices are required to ensure satisfactory performance of the soil for a specific use.

Slow intake (in tables). The slow movement of water into the soil.

Slow refill (in tables). The slow filling of ponds, resulting from restricted permeability in the soil.

Small stones (in tables). Rock fragments less than 3 inches (7.6 centimeters) in diameter. Small stones adversely affect the specified use of the soil.

Soil. A natural, three-dimensional body at the earth's surface. It is capable of supporting plants and has properties resulting from the integrated effect of climate and living matter acting on earthy parent material, as conditioned by relief over periods of time.

Soil separates. Mineral particles less than 2 millimeters in equivalent diameter and ranging between specified size limits. The names and sizes, in millimeters, of separates recognized in the United States are as follows:

Very coarse sand	2.0 to 1.0
Coarse sand	1.0 to 0.5
Medium sand	0.5 to 0.25
Fine sand	0.25 to 0.10
Very fine sand	0.10 to 0.05
Silt	0.05 to 0.002
Clay	less than 0.002

Solum. The upper part of a soil profile, above the C horizon, in which the processes of soil formation are active. The solum in soil consists of the A, E,

and B horizons. Generally, the characteristics of the material in these horizons are unlike those of the underlying material. The living roots and plant and animal activities are largely confined to the solum.

Stones. Rock fragments 10 to 24 inches (25 to 60 centimeters) in diameter if rounded or 15 to 24 inches (38 to 60 centimeters) in length if flat.

Stony. Refers to a soil containing stones in numbers that interfere with or prevent tillage.

Stripcropping. Growing crops in a systematic arrangement of strips or bands that provide vegetative barriers to wind erosion and water erosion.

Structure, soil. The arrangement of primary soil particles into compound particles or aggregates. The principal forms of soil structure are—*platy* (laminated), *prismatic* (vertical axis of aggregates longer than horizontal), *columnar* (prisms with rounded tops), *blocky* (angular or subangular), and *granular*. *Structureless* soils are either *single grained* (each grain by itself, as in dune sand) or *massive* (the particles adhering without any regular cleavage, as in many hardpans).

Stubble mulch. Stubble or other crop residue left on the soil or partly worked into the soil. It protects the soil from wind erosion and water erosion after harvest, during preparation of a seedbed for the next crop, and during the early growing period of the new crop.

Subsoil. Technically, the B horizon; roughly, the part of the solum below plow depth.

Subsoiling. Breaking up a compact subsoil by pulling a special chisel through the soil.

Substratum. The part of the soil below the solum.

Subsurface layer. Technically, the E horizon. Generally refers to a leached horizon lighter in color and lower in organic matter content than the overlying surface layer.

Summer fallow. The tillage of uncropped land during the summer to control weeds and allow storage of moisture in the soil for the growth of a later crop. A practice common in semiarid regions, where annual precipitation is not enough to produce a crop every year. Summer fallow is frequently practiced before planting winter grain.

Surface layer. The soil ordinarily moved in tillage, or its equivalent in uncultivated soil, ranging in depth from 4 to 10 inches (10 to 25 centimeters). Frequently designated as the "plow layer," or the "Ap horizon."

Taxadjuncts. Soils that cannot be classified in a series recognized in the classification system. Such soils are named for a series they strongly resemble and are designated as taxadjuncts to that series because they differ in ways too small to be of consequence in interpreting their use and behavior.

Terrace. An embankment, or ridge, constructed on the contour or at a slight angle to the contour across sloping soils. The terrace intercepts surface runoff, so that water soaks into the soil or flows slowly to a prepared outlet.

Terrace (geologic). An old alluvial plain, ordinarily flat or undulating, bordering a river, a lake, or the sea.

Texture, soil. The relative proportions of sand, silt, and clay particles in a mass of soil. The basic textural classes, in order of increasing proportion of fine particles, are *sand, loamy sand, sandy loam, loam, silt loam, silt, sandy clay loam, clay loam, silty clay loam, sandy clay, silty clay,* and *clay*. The sand, loamy sand, and sandy loam classes may be further divided by specifying "coarse," "fine," or "very fine."

Thin layer (in tables). Otherwise suitable soil material that is too thin for the specified use.

Tilth, soil. The physical condition of the soil as related to tillage, seedbed preparation, seedling emergence, and root penetration.

Topsoil. The upper part of the soil, which is the most favorable material for plant growth. It is ordinarily rich in organic matter and is used to topdress roadbanks, lawns, and land affected by mining.

Trace elements. Chemical elements, such as zinc, cobalt, manganese, copper, and iron, in soils in extremely small amounts. They are essential to plant growth.

Upland (geology). Land at a higher elevation, in general, than the alluvial plain or stream terrace; land above the lowlands along streams.

Variegation. Refers to patterns of contrasting colors that are assumed to be inherited from the parent material rather than to be the result of poor drainage.

Weathering. All physical and chemical changes produced by atmospheric agents in rocks or other deposits at or near the earth's surface. These changes result in disintegration and decomposition of the material.

Well graded. Refers to soil material consisting of coarse grained particles that are well distributed over a wide range in size or diameter. Such soil normally can be easily increased in density and bearing properties by compaction. Contrasts with poorly graded soil.

Wilting point (or permanent wilting point). The moisture content of soil, on an ovendry basis, at which a plant (specifically a sunflower) wilts so much that it does not recover when placed in a humid, dark chamber.

Tables

Table 1.--Temperature and Precipitation

(Recorded in the period 1961-90 at Wewahitchka, Florida)

Month	Temperature: Average daily maximum	Temperature: Average daily minimum	Temperature: Average daily	Temperature: 2 years in 10 will have-- Maximum temperature higher than--	Temperature: 2 years in 10 will have-- Minimum temperature lower than--	Temperature: Average number of growing degree days*	Precipitation: Average	Precipitation: 2 years in 10 will have-- Less than--	Precipitation: 2 years in 10 will have-- More than--	Precipitation: Average number of days with 0.10 inch or more	Precipitation: Average snowfall
	°F	°F	°F	°F	°F	Units	In	In	In		In
January-----	64.0	40.5	52.2	81	16	396	5.48	2.93	7.73	7	0.0
February----	66.7	41.8	54.2	83	22	404	5.23	3.20	7.05	6	0.0
March-------	73.7	48.7	61.2	87	25	641	6.08	3.72	8.20	6	0.0
April-------	80.5	54.3	67.4	91	37	812	3.42	0.79	5.50	4	0.0
May---------	86.9	61.2	74.1	95	47	1,029	3.64	1.52	5.44	5	0.0
June--------	91.0	68.0	79.5	99	56	1,184	7.07	3.63	10.08	8	0.0
July--------	91.6	70.6	81.1	99	63	1,252	9.80	6.02	13.21	13	0.0
August------	91.6	70.5	81.1	99	64	1,245	9.77	5.45	13.58	13	0.0
September---	88.8	67.1	78.0	97	51	1,120	6.28	2.70	9.74	7	0.0
October-----	81.7	55.7	68.7	92	30	886	4.00	0.72	6.51	4	0.0
November----	73.7	48.2	61.0	87	27	629	3.53	2.22	4.72	5	0.0
December----	66.6	42.1	54.3	83	19	450	5.03	2.48	7.24	6	0.0
Yearly:											
Average---	79.7	55.7	67.7	---	---	---	---	---	---	---	---
Extreme---	104	11	---	101	15	---	---	---	---	---	---
Total-----	---	---	---	---	---	10,047	69.34	44.02	80.28	84	0.0

* A growing degree day is a unit of heat available for plant growth. It can be calculated by adding the maximum and minimum daily temperatures, dividing the sum by 2, and subtracting the temperature below which growth is minimal for the principal crops in the area (40 degrees F).

Table 2.--Freeze Dates in Spring and Fall

(Recorded in the period 1961-90 at Wewahitchka, Florida)

Probability	Temperature		
	$24^{o}F$ or lower	$28^{o}F$ or lower	$32^{o}F$ or lower
Last freezing temperature in spring:			
1 year in 10 later than--	Feb. 22	Mar. 12	Mar. 24
2 years in 10 later than--	Feb. 10	Mar. 3	Mar. 16
5 years in 10 later than--	Jan. 2	Feb. 14	Mar. 2
First freezing temperature in fall:			
1 year in 10 earlier than--	Dec. 12	Nov. 21	Nov. 6
2 years in 10 earlier than--	Dec. 28	Dec. 3	Nov. 14
5 years in 10 earlier than--	---	Jan. 5	Nov. 29

Table 3.--Acreage and Proportionate Extent of the Soils

Map symbol	Soil name	Acres	Percent
2	Albany sand	10,349	2.9
3	Alapaha loamy fine sand	8,594	2.4
4	Aquents, gently undulating	1,622	0.5
5	Bladen fine sandy loam	4,853	1.4
6	Blanton sand, 0 to 5 percent slopes	3,625	1.0
7	Bayvi and Dirego soils, frequently flooded	1,521	0.4
8	Beaches	1,352	0.4
9	Ridgewood fine sand	783	0.2
10	Corolla fine sand, 1 to 5 percent slopes	828	0.2
11	Clarendon loamy fine sand, 2 to 5 percent slopes	1,296	0.4
12	Dothan-Fuquay complex, 5 to 8 percent slopes	1,013	0.3
13	Dorovan-Croatan complex, depressional	3,076	0.9
14	Duckston-Duckston, depressional, complex, frequently flooded	1,082	0.3
15	Wahee fine sandy loam	1,770	0.5
16	Ortega fine sand, 0 to 5 percent slopes	248	0.1
17	Fuquay loamy fine sand	1,869	0.5
19	Lucy loamy fine sand, 0 to 5 percent slopes	191	0.1
20	Lynn Haven fine sand	3,478	1.0
21	Leefield loamy fine sand	13,287	3.7
22	Leon fine sand	12,137	3.4
23	Maurepas muck, frequently flooded	11,379	3.2
24	Mandarin fine sand	2,593	0.7
25	Meggett fine sandy loam, occasionally flooded	5,975	1.7
26	Ocilla loamy fine sand, overwash, occasionally flooded	2,876	0.8
27	Pelham loamy fine sand	37,077	10.4
28	Plummer fine sand	37,618	10.5
30	Pantego and Bayboro soils, depressional	12,819	3.6
31	Pickney-Pamlico complex, depressional	13,433	3.8
32	Rains fine sandy loam	20,665	5.8
33	Resota fine sand, 0 to 5 percent slopes	1,013	0.3
34	Pickney and Rutlege soils, depressional	16,221	4.5
35	Stilson loamy fine sand, 0 to 5 percent slopes	3,721	1.0
36	Sapelo sand	2,870	0.8
37	Scranton fine sand	16,330	4.6
38	Meadowbrook fine sand, occasionally flooded	4,767	1.3
39	Surrency mucky fine sand, depressional	16,514	4.6
40	Brickyard silty clay, frequently flooded	16,843	4.7
41	Brickyard, Chowan, and Kenner soils, frequently flooded	25,114	7.0
42	Pottsburg fine sand	1,188	0.3
44	Pamlico-Pickney complex, frequently flooded	2,685	0.8
45	Croatan-Surrency complex, frequently flooded	15,440	4.3
46	Corolla-Duckston complex, gently undulating, flooded	2,877	0.8
47	Newhan-Corolla complex, rolling	446	0.1
48	Kureb-Corolla complex, rolling	2,014	0.6
49	Quartzipsamments, undulating	519	0.1
50	Wahee-Mantachie-Ochlockonee complex, commonly flooded	3,529	1.0
51	Kenansville-Eulonia complex, 0 to 5 percent slopes	387	0.1
52	Dothan loamy sand, 2 to 5 percent slopes	411	0.1
	Water	7,225	2.0
	Total	357,523	100.0

Table 4.--Land Capability Classes and Yields per Acre of Crops and Pasture

(Yields are those that can be expected under a high level of management. Absence of a yield indicates that the soil is not suited to the crop or the crop generally is not grown on the soil.)

Soil name and map symbol	Land capability	Soybeans	Corn	Bahiagrass	Improved bermudagrass
		Bu	Bu	AUM*	AUM*
2------------------------ Albany	IIIw	25	65	6.5	7.0
3------------------------ Alapaha	Vw	---	---	---	---
4------------------------ Aquents	IVw	---	---	---	---
5------------------------ Bladen	VIw	---	---	---	---
6------------------------ Blanton	IIIs	25	60	6.5	8.0
7------------------------ Bayvi and Dirego	VIIIw	---	---	---	---
8------------------------ Beaches	VIIIw	---	---	---	---
9------------------------ Ridgewood	IVs	---	---	7.0	---
10----------------------- Corolla	VIIs	---	---	---	---
11----------------------- Clarendon	IIe	35	105	10.0	10.5
12-----------------------	---	29	92	---	---
Dothan-------------------	IIIe				
Fuquay-------------------	IIIs				
13----------------------- Dorovan-Croatan	VIIw	---	---	---	---
14-----------------------	---	---	---	---	---
Duckston-----------------	Vw				
Duckston, depressional---	VIIw				
15----------------------- Wahee	IIw	45	110	8.0	---
16----------------------- Ortega	IIIs	---	---	6.0	---
17----------------------- Fuquay	IIs	30	85	---	---
19----------------------- Lucy	IIs	33	80	8.5	8.0
20----------------------- Lynn Haven	IVw	---	70	7.5	9.0

See footnote at end of table.

Table 4.--Land Capability Classes and Yields per Acre of Crops and Pasture--Continued

Soil name and map symbol	Land capability	Soybeans	Corn	Bahiagrass	Improved bermudagrass
		Bu	Bu	AUM*	AUM*
21 Leefield	IIw	---	85	8.0	8.7
22 Leon	IVw	---	50	7.5	9.0
23 Maurepas	VIIIw	---	---	---	---
24 Mandarin	VIs	---	---	6.0	---
25 Meggett	VIw	---	---	---	---
26 Ocilla	IVw	30	65	8.0	8.5
27 Pelham	Vw	---	---	---	---
28 Plummer	IVw	---	---	5.0	6.0
30:	---	---	---	---	---
Pantego	VIIw				
Baybro	VIw				
31 Pickney-Pamlico	VIIw	---	---	---	---
32 Rains	IIIw	40	110	10.0	---
33 Resota	VIs	---	---	5.0	---
34:	---	---	---	---	---
Pickney	VIw				
Rutlege	VIIw				
35 Stilson	IIs	35	80	7.5	10.0
36 Sapelo	IIIw	20	50	7.5	---
37 Scranton	IIIw	30	85	10.0	10.0
38 Meadowbrook	IVw	---	---	5.0	6.0
39 Surrency	VIw	---	---	---	---
40 Brickyard	VIIw	---	---	---	---

See footnote at end of table.

Table 4.--Land Capability Classes and Yields per Acre of Crops and Pasture--Continued

Soil name and map symbol	Land capability	Soybeans	Corn	Bahiagrass	Improved bermudagrass
		Bu	Bu	AUM*	AUM*
41: Brickyard, Chowan, and Kenner	VIIw	---	---	---	---
42: Pottsburg	IVw	---	---	6.5	7.5
44:	---	---	---	---	---
Pamlico	VIIw				
Pickney	VIw				
45: Croatan-Surrency	VIIw	---	---	---	---
46:	---	---	---	---	---
Corolla	VIIs				
Duckston	VIIw				
47:	---	---	---	---	---
Newhan	VIIIs				
Corolla	VIIs				
48: Kureb-Corolla	VIIs	---	---	---	---
49: Quartzipsamments	VIs	---	---	3.5	3.5
50:	---	---	---	---	---
Wahee	IIIw				
Mantachie	IIw				
Ochlockonee	IIw				
51:	---	---	87	---	---
Kenansville	IIs				
Eulonia	IIe				
52: Dothan	IIe	35	120	9.0	---

* Animal-unit-month: The amount of forage or feed required to feed one animal unit (one cow, one horse, one mule, five sheep, or five goats) for 30 days.

Table 5.--Woodland Management and Productivity

(Only the soils suitable for production of commercial trees are listed. Absence of an entry indicates that information was not available.)

Soil name and map symbol	Ordination symbol	Management concerns: Erosion hazard	Equipment limitation	Seedling mortality	Windthrow hazard	Plant competition	Potential productivity: Common trees	Site index	Productivity class*	Trees to plant
2------------ Albany	10W	Slight	Moderate	Moderate	Slight	Moderate	Loblolly pine-------	95	10	Loblolly pine, slash pine.
							Slash pine----------	85	11	
							Longleaf pine-------	80	7	
3------------ Alapaha	11W	Slight	Moderate	Slight	Slight	Moderate	Slash pine----------	87	11	Slash pine, loblolly pine.
							Loblolly pine-------	87	9	
							Longleaf pine-------	70	6	
4------------ Aquents	8W	Slight	Severe	Severe	Slight	Slight	Slash pine----------	70	8	Slash pine.
							Longleaf pine-------	---	---	
5------------ Bladen	9W	Slight	Severe	Severe	Slight	Moderate	Loblolly pine-------	94	9	Loblolly pine, slash pine, American sycamore, water oak, Nuttall oak.
							Slash pine----------	91	12	
							Sweetgum------------	90	7	
6------------ Blanton	11S	Slight	Moderate	Moderate	Slight	Slight	Slash pine----------	90	11	Slash pine, loblolly pine, longleaf pine.
							Loblolly pine-------	85	8	
							Longleaf pine-------	70	6	
							Bluejack oak--------	---	---	
							Turkey oak----------	---	---	
							Southern red oak----	---	---	
							Live oak------------	---	---	
9------------ Ridgewood	10W	Slight	Moderate	Moderate	Slight	Moderate	Slash pine----------	80	10	Slash pine, longleaf pine.
							Longleaf pine-------	65	5	
							Laurel oak----------	---	---	
							Live oak------------	---	---	
							Water oak-----------	---	---	
							Turkey oak----------	---	---	
11------------ Clarendon	9W	Slight	Slight	Moderate	Slight	Moderate	Loblolly pine-------	90	9	Loblolly pine, American sycamore, yellow-poplar, sweetgum.
							Sweetgum------------	85	6	
12:										
Dothan-------	9A	Slight	Slight	Slight	Slight	Moderate	Loblolly pine-------	88	9	Loblolly pine, slash pine, longleaf pine.
							Slash pine----------	92	12	
							Longleaf pine-------	84	8	
							Hickory-------------	---	---	
							Water oak-----------	---	---	
Fuquay-------	8S	Slight	Moderate	Moderate	Slight	Moderate	Loblolly pine-------	85	8	Loblolly pine, longleaf pine.
							Longleaf pine-------	77	7	
							Slash pine----------	93	12	

See footnote at end of table.

Table 5.--Woodland Management and Productivity--Continued

Soil name and map symbol	Ordination symbol	Management concerns: Erosion hazard	Management concerns: Equipment limitation	Management concerns: Seedling mortality	Management concerns: Windthrow hazard	Management concerns: Plant competition	Potential productivity: Common trees	Potential productivity: Site index	Potential productivity: Productivity class*	Trees to plant
13:										
Dorovan	7W	Slight	Severe	Severe	Severe	Severe	Blackgum	70	7	Baldcypress.
							Sweetbay	---	---	
							Baldcypress	---	---	
							Swamp tupelo	---	---	
							Green ash	---	---	
							Red maple	---	---	
							Water tupelo	---	---	
Croatan	2W	Slight	Severe	Severe	Severe	Severe	Pond pine	55	2	Loblolly pine, pond pine.
							Loblolly pine	70	6	
							Sweetgum	70	4	
14 Duckston	7W	Slight	Severe	Severe	Moderate	Severe	Slash pine	60	7	
							Eastern redcedar	---	---	
							Cabbage palm	---	---	
15 Wahee	9W	Slight	Moderate	Moderate	Slight	Severe	Loblolly pine	86	9	Loblolly pine, slash pine, sweetgum, American sycamore, water oak.
							Slash pine	86	11	
							Sweetgum	90	7	
							Blackgum	---	---	
							Water oak	---	---	
							Swamp chestnut oak	---	---	
							Willow oak	---	---	
							Southern red oak	---	---	
16 Ortega	10S	Slight	Moderate	Moderate	Slight	Moderate	Slash pine	80	10	Slash pine, loblolly pine, longleaf pine.
							Longleaf pine	70	6	
							Loblolly pine	80	8	
							Blackjack oak	---	---	
							Post oak	---	---	
							Turkey oak	---	---	
17 Fuquay	8S	Slight	Moderate	Moderate	Slight	Moderate	Loblolly pine	85	8	Loblolly pine, longleaf pine.
							Longleaf pine	77	7	
							Slash pine	93	12	
19 Lucy	8S	Slight	Moderate	Moderate	Slight	Moderate	Loblolly pine	80	8	Slash pine, longleaf pine, loblolly pine.
							Longleaf pine	70	6	
							Slash pine	84	11	
20 Lynn Haven	11W	Slight	Moderate	Moderate	Slight	Severe	Slash pine	85	11	Slash pine, loblolly pine.
							Loblolly pine	80	8	
							Longleaf pine	70	6	
							Pond pine	70	---	
							Water oak	---	---	
							Sweetbay	---	---	
21 Leefield	8W	Slight	Moderate	Moderate	Moderate	Slight	Loblolly pine	84	8	Loblolly pine, slash pine.
							Slash pine	84	11	
							Longleaf pine	70	6	
22 Leon	10W	Slight	Moderate	Moderate	Slight	Moderate	Slash pine	80	10	Slash pine.
							Longleaf pine	70	6	
							Loblolly pine	75	7	

See footnote at end of table.

Table 5.--Woodland Management and Productivity--Continued

Soil name and map symbol	Ordination symbol	Management concerns: Erosion hazard	Management concerns: Equipment limitation	Management concerns: Seedling mortality	Management concerns: Windthrow hazard	Management concerns: Plant competition	Potential productivity: Common trees	Potential productivity: Site index	Potential productivity: Productivity class*	Trees to plant
24----------- Mandarin	8S	Slight	Moderate	Severe	Slight	Moderate	Slash pine----------	70	8	Slash pine, longleaf pine.
							Longleaf pine-------	60	4	
							Live oak------------	---	---	
25----------- Meggett	13W	Slight	Severe	Severe	Slight	Severe	Slash pine----------	100	13	Slash pine, loblolly pine.
							Loblolly pine-------	100	11	
							Pond pine-----------	75	4	
26----------- Ocilla	8W	Slight	Moderate	Moderate	Slight	Moderate	Loblolly pine-------	85	8	Loblolly pine, slash pine.
							Slash pine----------	90	11	
							Longleaf pine-------	77	7	
27----------- Pelham	11W	Slight	Severe	Severe	Slight	Moderate	Slash pine----------	90	11	Slash pine, loblolly pine.
							Loblolly pine-------	90	9	
							Longleaf pine-------	80	7	
							Sweetgum------------	80	6	
							Blackgum------------	80	8	
							Water oak-----------	80	5	
28----------- Plummer	11W	Slight	Severe	Severe	Slight	Moderate	Slash pine----------	88	11	Loblolly pine, slash pine.
							Loblolly pine-------	91	9	
							Longleaf pine-------	70	6	
30:										
Pantego-----	2W	Slight	Severe	Severe	Slight	Severe	Pondcypress---------	75	2	Baldcypress, water tupelo.
							Pond pine-----------	---	---	
							Water tupelo--------	---	---	
							Water oak-----------	---	---	
							Red maple-----------	---	---	
							Sweetbay------------	---	---	
							Blackgum------------	---	---	
							Baldcypress---------	---	---	
Bayboro-----	8W	Slight	Severe	Severe	Severe	Severe	Sweetgum------------	94	8	Loblolly pine, sweetgum, water tupelo.
							Swamp tupelo--------	---	---	
							Water tupelo--------	---	---	
							Baldcypress---------	---	---	
							Red maple-----------	---	---	
							Willow oak----------	---	---	
							Water oak-----------	---	---	
							Swamp chestnut oak--	---	---	
							American elm--------	---	---	
31:										
Pickney-----	7W	Slight	Severe	Severe	Severe	Severe	Sweetgum------------	90	7	Baldcypress.
							Baldcypress---------	---	---	
							Water tupelo--------	---	---	
Pamlico-----	4W	Slight	Severe	Severe	Severe	Severe	Pond pine-----------	55	2	Pond pine, water tupelo.
							Baldcypress---------	---	---	
							Water tupelo--------	---	---	
32----------- Rains	10W	Slight	Moderate	Moderate	Severe	Severe	Loblolly pine-------	94	10	Loblolly pine, sweetgum, American sycamore.
							Sweetgum------------	90	7	

See footnote at end of table.

Table 5.--Woodland Management and Productivity--Continued

Soil name and map symbol	Ordination symbol	Management concerns: Erosion hazard	Equipment limitation	Seedling mortality	Windthrow hazard	Plant competition	Potential productivity: Common trees	Site index	Productivity class*	Trees to plant
33----------- Resota	8S	Slight	Moderate	Severe	Slight	Moderate	Slash pine----------	70	8	Slash pine, longleaf pine.
							Longleaf pine-------	65	5	
							Sand pine-----------	60	3	
							Sand live oak-------	---	---	
34:										
Pickney-----	7W	Slight	Severe	Severe	Severe	Severe	Sweetgum------------	90	7	Baldcypress.
							Baldcypress---------	---	---	
							Water tupelo--------	---	---	
Rutlege-----	2W	Slight	Severe	Severe	Severe	Severe	Pondcypress---------	75	2	Sweetgum, water tupelo.
							Blackgum------------	---	---	
							Sweetbay------------	---	---	
							Water tupelo--------	---	---	
							Sweetgum------------	---	---	
							Red maple-----------	---	---	
35----------- Stilson	9W	Slight	Moderate	Slight	Slight	Slight	Loblolly pine-------	95	9	Slash pine, loblolly pine, longleaf pine.
							Slash pine----------	95	12	
							Longleaf pine-------	80	7	
							Sweetgum------------	---	---	
36----------- Sapelo	7W	Slight	Moderate	Moderate	Slight	Moderate	Loblolly pine-------	77	7	Loblolly pine, slash pine.
							Slash pine----------	77	10	
							Longleaf pine-------	65	5	
37----------- Scranton	11W	Slight	Moderate	Slight	Slight	Severe	Slash pine----------	84	11	Loblolly pine, slash pine.
							Longleaf pine-------	70	11	
							Loblolly pine-------	80	8	
							Sweetgum------------	---	---	
38----------- Meadowbrook	11W	Slight	Severe	Severe	Slight	Severe	Slash pine----------	88	11	Slash pine, loblolly pine.
							Loblolly pine-------	91	9	
							Blackgum------------	---	---	
							Laurel oak----------	---	---	
							Red maple-----------	---	---	
							Sweetgum------------	---	---	
							Water oak-----------	---	---	
39----------- Surrency	10W	Slight	Severe	Severe	Slight	Severe	Loblolly pine-------	95	10	Loblolly pine, slash pine, sweetgum, American sycamore, water tupelo.
							Slash pine----------	90	11	
							Sweetgum------------	90	7	
							Blackgum------------	---	---	
							Water oak-----------	---	---	
							Cypress-------------	---	---	
							Water tupelo--------	---	---	
40----------- Brickyard	7W	Slight	Severe	Severe	Severe	Severe	Slash pine----------	75	7	Slash pine, loblolly pine.
							Baldcypress---------	---	---	
							Atlantic white cedar	---	---	
							Water oak-----------	---	---	
							Overcup oak---------	---	---	
41:										
Brickyard---	7W	Slight	Severe	Severe	Severe	Severe	Slash pine----------	75	7	Slash pine, loblolly pine.
							Baldcypress---------	---	---	
							Atlantic white cedar	---	---	
							Water oak-----------	---	---	
							Overcup oak---------	---	---	

See footnote at end of table.

Table 5.--Woodland Management and Productivity--Continued

Soil name and map symbol	Ordination symbol	Management concerns: Erosion hazard	Equipment limitation	Seedling mortality	Windthrow hazard	Plant competition	Potential productivity: Common trees	Site index	Productivity class*	Trees to plant
41: Chowan-------	9W	Slight	Severe	Severe	Severe	Severe	Water tupelo--------	84	9	Baldcypress, green ash.
							Green ash-----------	98	6	
							Sweetgum------------	---	---	
							Baldcypress---------	---	---	
							Red maple-----------	---	---	
							Pond pine-----------	---	---	
							Atlantic white cedar	---	---	
Kenner.										
42------------ Pottsburg	8W	Slight	Moderate	Moderate	Slight	Severe	Slash pine----------	75	8	Slash pine, loblolly pine, longleaf pine.
							Longleaf pine-------	60	4	
							Loblolly pine-------	70	6	
							Live oak------------	---	---	
							Water oak-----------	---	---	
44: Pamlico------	2W	Slight	Severe	Severe	Severe	Severe	Pond pine-----------	55	2	Baldcypress, water tupelo.
							Baldcypress---------	---	---	
							Water tupelo--------	---	---	
Pickney------	7W	Slight	Severe	Severe	Severe	Severe	Sweetgum------------	90	7	Water tupelo, sweetgum, baldcypress.
							Water tupelo--------	---	---	
							Water oak-----------	---	---	
							Pond pine-----------	---	---	
							Yellow-poplar-------	---	---	
							Blackgum------------	---	---	
							Baldcypress---------	---	---	
45: Croatan------	2W	Slight	Severe	Severe	Severe	Severe	Pond pine-----------	55	2	Loblolly pine, pond pine.
							Loblolly pine-------	70	6	
							Sweetgum------------	70	4	
Surrency-----	10W	Slight	Severe	Severe	Slight	Severe	Loblolly pine-------	95	10	Loblolly pine, slash pine, sweetgum, American sycamore, water tupelo.
							Slash pine----------	90	11	
							Sweetgum------------	90	7	
							Blackgum------------	---	---	
							Water oak-----------	---	---	
							Baldcypress---------	---	---	
							Water tupelo--------	---	---	
48: Kureb--------	6S	Slight	Moderate	Severe	Slight	Slight	Loblolly pine-------	64	6	Longleaf pine, loblolly pine, slash pine.
							Longleaf pine-------	53	3	
							Slash pine----------	---	---	
Corolla.										
49. Quartzipsamments										
50: Wahee--------	8W	Slight	Moderate	Moderate	Moderat	Moderate	Sweetgum------------	95	8	Sweetgum, water tupelo.
							Water oak-----------	---	---	
							Water tupelo--------	---	---	

See footnote at end of table.

Table 5.--Woodland Management and Productivity--Continued

Soil name and map symbol	Ordination symbol	Management concerns: Erosion hazard	Equipment limitation	Seedling mortality	Windthrow hazard	Plant competition	Potential productivity: Common trees	Site index	Productivity class*	Trees to plant
50:										
Mantachie---	10W	Slight	Moderate	Moderate	Severe	Severe	Loblolly pine-------	98	10	Loblolly pine,
							Eastern cottonwood--	90	7	eastern
							Cherrybark oak------	100	10	cottonwood,
							Green ash-----------	80	4	cherrybark oak,
							Sweetgum------------	95	8	green ash,
							Yellow-poplar-------	95	7	sweetgum,
										yellow-poplar.
Ochlockonee-	11A	Slight	Slight	Slight	Slight	Moderate	Loblolly pine-------	100	11	Loblolly pine,
							Eastern cottonwood--	100	9	eastern
							Yellow-poplar-------	110	9	cottonwood,
							Slash pine----------	100	13	yellow-poplar.
							Sweetgum------------	90	7	
							Water oak-----------	80	5	
51:										
Kenansville-	8S	Slight	Moderate	Moderate	Slight	Moderate	Loblolly pine-------	80	8	Loblolly pine,
							Longleaf pine-------	65	5	slash pine.
Eulonia-----	9W	Slight	Slight	Slight	Slight	Moderate	Loblolly pine-------	90	9	Loblolly pine,
							Slash pine----------	88	11	slash pine,
							Water oak-----------	90	6	American
							Sweetgum------------	90	7	sycamore,
							Blackgum------------	---	---	sweetgum,
							Southern red oak----	---	---	yellow-poplar.
							Longleaf pine-------	85	8	
							Hickory-------------	---	---	
52----------- Dothan	9A	Slight	Slight	Slight	Slight	Moderate	Loblolly pine-------	88	9	Loblolly pine,
							Slash pine----------	92	12	slash pine,
							Longleaf pine-------	84	8	longleaf pine.
							Hickory-------------	---	---	
							Water oak-----------	---	---	

* Productivity class is the yield in cubic meters per hectare per year calculated at the age of culmination of mean annual increment for fully stocked natural stands.

Table 6.--Recreational Development

(Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "slight," "moderate," and "severe." Absence of an entry indicates that the soil was not rated.)

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
2---------------------Albany	Severe: wetness, too sandy.	Severe: too sandy.	Severe: too sandy, wetness.	Severe: too sandy.	Severe: droughty.
3---------------------Alapaha	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
4---------------------Aquents	Severe: wetness, too sandy.	Severe: wetness, too sandy.	Severe: too sandy, wetness.	Severe: wetness, too sandy.	Severe: wetness, droughty.
5---------------------Bladen	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
6---------------------Blanton	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: droughty.
7:					
Bayvi-----------------	Severe: flooding, wetness, too sandy.	Severe: wetness, too sandy, excess salt.	Severe: too sandy, wetness, flooding.	Severe: wetness, too sandy.	Severe: excess salt, wetness, droughty.
Dirego----------------	Severe: flooding, wetness, excess humus.	Severe: wetness, excess humus, excess salt.	Severe: excess humus, wetness, flooding.	Severe: wetness, excess humus.	Severe: excess salt, excess sulfur, wetness.
8---------------------Beaches	Severe: flooding, wetness, too sandy.	Severe: wetness, too sandy, excess salt.	Severe: too sandy, wetness.	Severe: wetness, too sandy.	Severe: excess salt, wetness, droughty.
9---------------------Ridgewood	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: droughty.
10--------------------Corolla	Severe: flooding, too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: droughty.
11--------------------Clarendon	Moderate: wetness.	Moderate: wetness.	Moderate: slope, small stones.	Slight----------	Moderate: droughty.
12:					
Dothan----------------	Slight----------	Slight----------	Severe: slope.	Slight----------	Moderate: droughty.
Fuquay----------------	Moderate: too sandy.	Moderate: too sandy.	Severe: slope.	Moderate: too sandy.	Moderate: droughty.
13:					
Dorovan---------------	Severe: ponding, excess humus.	Severe: ponding, excess humus.	Severe: excess humus, ponding.	Severe: ponding, excess humus.	Severe: ponding, excess humus.

Table 6.--Recreational Development--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
13: Croatan	Severe: flooding, wetness, excess humus.	Severe: wetness, excess humus, too acid.	Severe: excess humus, wetness.	Severe: wetness, excess humus.	Severe: wetness.
14: Duckston	Severe: flooding, wetness, too sandy.	Severe: wetness, too sandy, excess salt.	Severe: too sandy, wetness, flooding.	Severe: wetness, too sandy.	Severe: excess salt, wetness.
Duckston, depressional	Severe: flooding, ponding, too sandy.	Severe: ponding, too sandy, excess salt.	Severe: too sandy, ponding, flooding.	Severe: ponding, too sandy.	Severe: excess salt, ponding.
15 Wahee	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
16 Ortega	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: droughty.
17 Fuquay	Moderate: too sandy.	Moderate: too sandy.	Moderate: too sandy.	Moderate: too sandy.	Moderate: droughty.
19 Lucy	Slight	Slight	Moderate: slope.	Slight	Moderate: droughty.
20 Lynn Haven	Severe: wetness, too sandy.	Severe: wetness, too sandy.	Severe: too sandy, wetness.	Severe: wetness, too sandy.	Severe: wetness.
21 Leefield	Moderate: wetness, too sandy.	Moderate: wetness, too sandy.	Moderate: too sandy, wetness.	Moderate: wetness, too sandy.	Moderate: wetness, droughty.
22 Leon	Severe: wetness, too sandy.	Severe: wetness, too sandy.	Severe: too sandy, wetness.	Severe: wetness, too sandy.	Severe: wetness.
23 Maurepas	Severe: flooding, ponding, excess humus.	Severe: ponding, excess humus.	Severe: excess humus, ponding, flooding.	Severe: ponding, excess humus.	Severe: ponding, flooding, excess humus.
24 Mandarin	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Moderate: wetness, droughty.
25 Meggett	Severe: flooding, wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
26 Ocilla	Severe: flooding.	Moderate: wetness, too sandy.	Moderate: wetness.	Moderate: wetness, too sandy.	Moderate: wetness, droughty, flooding.
27 Pelham	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.

Table 6.--Recreational Development--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
28-------------------- Plummer	Severe: wetness, too sandy.	Severe: wetness, too sandy.	Severe: too sandy, wetness.	Severe: wetness, too sandy.	Severe: wetness, droughty.
30:					
Pantego--------------	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.
Bayboro--------------	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.
31:					
Pickney--------------	Severe: ponding, too sandy.	Severe: ponding, too sandy.	Severe: too sandy, ponding.	Severe: too sandy, ponding.	Severe: ponding.
Pamlico--------------	Severe: flooding, ponding, excess humus.	Severe: ponding, excess humus.	Severe: excess humus, ponding.	Severe: ponding, excess humus.	Severe: ponding, excess humus.
32-------------------- Rains	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
33-------------------- Resota	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: droughty.
34:					
Pickney--------------	Severe: ponding, too sandy.	Severe: ponding, too sandy.	Severe: too sandy, ponding.	Severe: too sandy, ponding.	Severe: ponding.
Rutlege--------------	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding, droughty.
35-------------------- Stilson	Moderate: too sandy.	Moderate: too sandy.	Moderate: slope, too sandy.	Moderate: too sandy.	Moderate: droughty.
36-------------------- Sapelo	Severe: wetness, too sandy.	Severe: wetness, too sandy.	Severe: too sandy, wetness.	Severe: wetness, too sandy.	Severe: wetness, droughty.
37-------------------- Scranton	Severe: wetness, too sandy.	Severe: wetness, too sandy.	Severe: too sandy, wetness.	Severe: wetness, too sandy.	Severe: wetness.
38-------------------- Meadowbrook	Severe: flooding, wetness, too sandy.	Severe: wetness, too sandy.	Severe: too sandy, wetness.	Severe: wetness, too sandy.	Severe: wetness, droughty.
39-------------------- Surrency	Severe: ponding, too sandy.	Severe: ponding, too sandy.	Severe: too sandy, ponding.	Severe: ponding, too sandy.	Severe: ponding.

Table 6.--Recreational Development--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
40 Brickyard	Severe: flooding, wetness, percs slowly.	Severe: wetness, too clayey, percs slowly.	Severe: too clayey, wetness, flooding.	Severe: wetness, too clayey.	Severe: wetness, flooding, too clayey.
41:					
Brickyard	Severe: flooding, wetness, percs slowly.	Severe: wetness, too clayey, percs slowly.	Severe: too clayey, wetness, flooding.	Severe: wetness, too clayey.	Severe: wetness, flooding, too clayey.
Chowan	Severe: flooding, wetness.	Severe: wetness, too acid.	Severe: wetness, flooding.	Severe: wetness.	Severe: wetness, flooding.
Kenner	Severe: flooding, ponding, percs slowly.	Severe: ponding, excess humus, percs slowly.	Severe: excess humus, ponding, flooding.	Severe: ponding, excess humus.	Severe: flooding, ponding, excess humus.
42 Pottsburg	Severe: flooding, wetness, too sandy.	Severe: wetness, too sandy.	Severe: too sandy, wetness.	Severe: wetness, too sandy.	Severe: wetness, droughty.
44:					
Pamlico	Severe: flooding, ponding, excess humus.	Severe: ponding, excess humus.	Severe: excess humus, ponding, flooding.	Severe: ponding, excess humus.	Severe: ponding, flooding.
Pickney	Severe: flooding, too sandy, ponding.	Severe: too sandy, ponding.	Severe: too sandy, flooding, ponding.	Severe: too sandy, ponding.	Severe: flooding, ponding.
45:					
Croatan	Severe: flooding, wetness, excess humus.	Severe: wetness, excess humus, too acid.	Severe: excess humus, wetness, flooding.	Severe: wetness, excess humus.	Severe: wetness, flooding.
Surrency	Severe: flooding, wetness, too sandy.	Severe: wetness, too sandy.	Severe: too sandy, flooding.	Severe: wetness, too sandy.	Severe: wetness, flooding.
46:					
Corolla	Severe: flooding, too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: droughty.
Duckston	Severe: flooding, wetness, too sandy.	Severe: wetness, too sandy, excess salt.	Severe: too sandy, wetness.	Severe: wetness, too sandy.	Severe: excess salt, wetness.

Table 6.--Recreational Development--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
47:					
Newhan	Severe: flooding, slope, too sandy.	Severe: slope, too sandy, excess salt.	Severe: slope, too sandy, excess salt.	Severe: too sandy.	Severe: excess salt, droughty.
Corolla	Severe: flooding, too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: droughty.
48:					
Kureb	Severe: too sandy, too acid.	Severe: too sandy, too acid.	Severe: slope, too sandy, too acid.	Severe: too sandy.	Severe: droughty.
Corolla	Severe: flooding, too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: droughty.
49 Quartzipsamments	Severe: too sandy.	Severe: too sandy.	Severe: slope, too sandy.	Severe: too sandy.	Severe: droughty.
50:					
Wahee	Severe: flooding.	Moderate: flooding, wetness.	Severe: flooding.	Moderate: wetness, flooding.	Severe: flooding.
Mantachie	Severe: flooding, wetness.	Moderate: wetness.	Severe: wetness.	Moderate: wetness.	Moderate: wetness, flooding.
Ochlockonee	Severe: flooding.	Slight	Moderate: flooding.	Slight	Moderate: flooding.
51:					
Kenansville	Moderate: too sandy.	Moderate: too sandy.	Moderate: slope, too sandy.	Moderate: too sandy.	Moderate: droughty.
Eulonia	Moderate: wetness, percs slowly.	Moderate: wetness, percs slowly.	Moderate: slope, wetness, percs slowly.	Moderate: wetness.	Moderate: wetness.
52 Dothan	Slight	Slight	Moderate: slope.	Slight	Moderate: droughty.

Table 7.--Wildlife Habitat

(See text for definitions of "good," "fair," "poor," and "very poor." Absence of an entry indicates that the soil was not rated.)

Soil name and map symbol	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Potential as habitat for--: Openland wildlife	Woodland wildlife	Wetland wildlife
2: Albany	Fair	Fair	Fair	Fair	Fair	Fair	Poor	Fair	Fair	Poor.
3: Alapaha	Very poor.	Poor	Fair	Fair	Fair	Fair	Fair	Poor	Fair	Fair.
4: Aquents	Poor	Poor	Poor	Poor	Poor	Fair	Poor	Poor	Poor	Fair.
5: Bladen	Poor	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good.
6: Blanton	Poor	Fair	Fair	Fair	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.
7:										
Bayvi	Very poor.	Very poor.	Very poor.	Very poor.	Very poor.	Fair	Good	Very poor.	Very poor.	Fair.
Dirego	Very poor.	Very poor.	Very poor.	Very poor.	Very poor.	Fair	Good	Very poor.	Very poor.	Fair.
8: Beaches	Very poor.	Very poor.	Very poor.	Very poor.	Very poor.	Very poor.	Very poor.	Very poor.	Very poor.	Very poor.
9: Ridgewood	Poor	Poor	Fair	Fair	Fair	Poor	Poor	Poor	Fair	Poor.
10: Corolla	Very poor.	Very poor.	Very poor.	Very poor.	Very poor.	Poor	Very poor.	Very poor.	Very poor.	Very poor.
11: Clarendon	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.
12:										
Dothan	Good	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
Fuquay	Poor	Fair	Good	Fair	Fair	Poor	Very poor.	Good	Fair	Very poor.
13:										
Dorovan	Very poor.	Very poor.	Very poor.	Very poor.	Very poor.	Good	Good	Very poor.	Very poor.	Good.
Croatan	Very poor.	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good.
14:										
Duckston	Very poor.	Very poor.	Very poor.	Very poor.	Very poor.	Poor	Poor	Very poor.	Very poor.	Poor.
Duckston, depressional	Very poor.	Very poor.	Very poor.	Very poor.	Very poor.	Poor	Poor	Very poor.	Very poor.	Poor.

Table 7.--Wildlife Habitat--Continued

Soil name and map symbol	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Potential as habitat for--: Openland wildlife	Woodland wildlife	Wetland wildlife
15----------------- Wahee	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.
16----------------- Ortega	Poor	Fair	Fair	Fair	Fair	Very poor.	Very poor.	Fair	Fair	Very. poor.
17----------------- Fuquay	Fair	Fair	Good	Fair	Fair	Poor	Very poor.	Good	Fair	Very poor.
19----------------- Lucy	Poor	Fair	Good	Good	Good	Poor	Very poor.	Fair	Good	Very poor.
20----------------- Lynn Haven	Poor	Fair	Fair	Poor	Poor	Fair	Fair	Fair	Poor	Fair.
21----------------- Leefield	Fair	Fair	Good	Fair	Fair	Fair	Fair	Fair	Fair	Fair.
22----------------- Leon	Poor	Fair	Fair	Poor	Fair	Poor	Fair	Fair	Fair	Poor.
23----------------- Maurepas	Very poor.	Very poor.	Very poor.	Very poor.	---	Fair	Very poor.	Very poor.	Very poor.	Fair.
24----------------- Mandarin	Very poor.	Poor	Poor	Poor	Fair	Very poor.	Very poor.	Poor	Poor	Very poor.
25----------------- Meggett	Poor	Fair	Fair	Fair	Good	Good	Good	Fair	Good	Good.
26----------------- Ocilla	Poor	Fair	Fair	Fair	Good	Fair	Fair	Fair	Good	Fair.
27----------------- Pelham	Poor	Poor	Fair	Fair	Fair	Fair	Fair	Poor	Fair	Fair.
28----------------- Plummer	Poor	Fair	Fair	Fair	Fair	Fair	Fair	Fair	Fair	Fair.
30:										
Pantego-----------	Very poor.	Very poor.	Very poor.	Fair	Poor	Good	Good	Very poor.	Poor	Good.
Bayboro-----------	Very poor.	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good.
31:										
Pickney-----------	Very poor.	Very poor.	Very poor.	Poor	Poor	Good	Good	Very poor.	Poor	Good.
Pamlico-----------	Very poor.	Very poor.	Poor	Poor	Poor	Good	Good	Very poor.	Poor	Good.
32----------------- Rains	Fair	Fair	Fair	Good	Good	Good	Good	Fair	Good	Good.
33----------------- Resota	Poor	Poor	Fair	Poor	Poor	Very poor.	Very poor.	Poor	Poor	Very poor.

Table 7.--Wildlife Habitat--Continued

Soil name and map symbol	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Potential as habitat for--: Openland wildlife	Woodland wildlife	Wetland wildlife
34:										
Pickney-----------	Very poor.	Very poor.	Very poor.	Poor	Poor	Good	Good	Very poor.	Poor	Good.
Rutlege-----------	Very poor.	Poor	Poor	Poor	Poor	Fair	Good	Poor	Poor	Fair.
35----------------- Stilson	Fair	Fair	Good	Fair	Fair	Poor	Poor	Fair	Fair	Poor.
36----------------- Sapelo	Poor	Fair	Fair	Poor	Fair	Fair	Fair	Fair	Fair	Fair.
37----------------- Scranton	Fair	Fair	Good	Fair	Fair	Poor	Poor	Fair	Fair	Poor.
38----------------- Meadowbrook	Poor	Fair	Fair	Fair	Fair	Fair	Fair	Fair	Fair	Fair.
39----------------- Surrency	Poor	Poor	Poor	Poor	Poor	Fair	Good	Poor	Poor	Fair.
40----------------- Brickyard	Poor	Poor	Fair	Good	Fair	Good	Fair	Poor	Good	Fair.
41:										
Brickyard---------	Poor	Poor	Fair	Good	Fair	Good	Fair	Poor	Good	Fair.
Chowan------------	Poor	Fair	Fair	Fair	Fair	Good	Fair	Fair	Fair	Fair.
Kenner------------	Very poor.	Very poor.	Very poor.	Very poor.	Very poor.	Good	Very poor.	Very poor.	Very- poor.	Good.
42----------------- Pottsburg	Poor	Fair	Fair	Poor	Fair	Poor	Fair	Poor	Fair	Fair.
44:										
Pamlico-----------	Very poor.	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good.
Pickney-----------	Very poor.	Poor	Fair	Poor	Poor	Good	Very poor.	Poor	Poor	Good.
45:										
Croatan-----------	Very poor.	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good.
Surrency----------	Poor	Poor	Poor	Poor	Poor	Fair	Good	Poor	Poor	Fair.
46:										
Corolla-----------	Very poor.	Very poor.	Very poor.	Very poor.	Very poor.	Poor	Very poor.	Very poor.	Very poor.	Very poor.
Duckston----------	Very poor.	Very poor.	Very poor.	Very poor.	Very poor.	Poor	Poor	Very poor.	Very poor.	Poor.

Table 7.--Wildlife Habitat--Continued

Soil name and map symbol	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Potential as habitat for--: Openland wildlife	Woodland wildlife	Wetland wildlife
47:										
Newhan	Very poor.	Poor	Poor	Very poor.	Very poor.	Very poor.	Very poor.	Poor	Very poor.	Very poor.
Corolla	Very poor.	Very poor.	Very poor.	Very poor.	Very poor.	Poor	Very poor.	Very poor.	Very poor.	Very poor.
48:										
Kureb	Very poor.	Poor	Poor	Very poor.	Poor	Very poor.	Very poor.	Poor	Very poor.	Very poor.
Corolla	Very poor.	Very poor.	Very poor.	Very poor.	Very poor.	Poor	Very poor.	Very poor.	Very poor.	Very poor.
49 Quartzipsamments	Poor	Poor	Fair	Poor	Poor	Very poor.	Very poor.	Poor	Poor	Very poor.
50:										
Wahee	Very poor.	Poor	Poor	Good	Fair	Fair	Fair	Poor	Fair	Fair.
Mantachie	Fair	Good	Good	Good	Fair	Fair	Fair	Good	Good	Fair.
Ochlockonee	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
51:										
Kenansville	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
Eulonia	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.
52 Dothan	Good	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.

Table 8.--Building Site Development

(Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "slight," "moderate," and "severe." Absence of an entry indicates that the soil was not rated. The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation.)

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
2----------------- Albany	Severe: cutbanks cave, wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Moderate: wetness.	Severe: droughty.
3----------------- Alapaha	Severe: cutbanks cave, wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
4----------------- Aquents	Severe: cutbanks cave, wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness, droughty.
5----------------- Bladen	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: low strength, wetness.	Severe: wetness.
6----------------- Blanton	Severe: cutbanks cave.	Slight---------	Moderate: wetness.	Slight---------	Slight---------	Severe: droughty.
7:						
Bayvi------------	Severe: cutbanks cave, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: wetness, flooding.	Severe: excess salt, wetness, droughty.
Dirego-----------	Severe: cutbanks cave, excess humus, wetness.	Severe: subsides, flooding, wetness.	Severe: subsides, flooding, wetness.	Severe: subsides, flooding, wetness.	Severe: subsides, wetness, flooding.	Severe: excess salt, excess sulfur, wetness.
8----------------- Beaches	Severe: cutbanks cave, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: wetness, flooding.	Severe: excess salt, wetness, droughty.
9----------------- Ridgewood	Severe: cutbanks cave, wetness.	Moderate: wetness.	Severe: wetness.	Moderate: wetness.	Moderate: wetness.	Severe: droughty.
10---------------- Corolla	Severe: cutbanks cave, wetness.	Severe: flooding.	Severe: flooding, wetness.	Severe: flooding.	Moderate: wetness, flooding.	Severe: droughty.
11---------------- Clarendon	Severe: wetness.	Moderate: wetness.	Severe: wetness.	Moderate: wetness.	Moderate: wetness.	Moderate: droughty.
12:						
Dothan-----------	Moderate: wetness.	Slight---------	Moderate: wetness.	Moderate: slope.	Slight---------	Moderate: droughty.
Fuquay-----------	Slight---------	Slight---------	Moderate: wetness.	Moderate: slope.	Slight---------	Moderate: droughty.

Table 8.--Building Site Development--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
13:						
Dorovan----------	Severe: excess humus, ponding.	Severe: subsides, ponding.	Severe: subsides, ponding.	Severe: subsides, ponding.	Severe: subsides, ponding.	Severe: ponding, excess humus.
Croatan----------	Severe: excess humus, wetness.	Severe: subsides, flooding, wetness.	Severe: subsides, flooding, wetness.	Severe: subsides, flooding, wetness.	Severe: subsides, wetness.	Severe: wetness.
14:						
Duckston---------	Severe: cutbanks cave, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: wetness, flooding.	Severe: excess salt, wetness.
Duckston, depressional----	Severe: cutbanks cave, ponding.	Severe: flooding, ponding.	Severe: flooding, ponding.	Severe: flooding, ponding.	Severe: ponding, flooding.	Severe: excess salt, ponding.
15---------------- Wahee	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: low strength, wetness.	Severe: wetness.
16---------------- Ortega	Severe: cutbanks cave.	Slight---------	Moderate: wetness.	Slight---------	Slight---------	Severe: droughty.
17---------------- Fuquay	Slight---------	Slight---------	Moderate: wetness.	Slight---------	Slight---------	Moderate: droughty.
19---------------- Lucy	Moderate: cutbanks cave.	Slight---------	Slight---------	Slight---------	Slight---------	Moderate: droughty.
20---------------- Lynn Haven	Severe: cutbanks cave, wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
21---------------- Leefield	Severe: cutbanks cave, wetness.	Moderate: wetness.	Severe: wetness.	Moderate: wetness.	Moderate: wetness.	Moderate: wetness, droughty.
22---------------- Leon	Severe: cutbanks cave, wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
23---------------- Maurepas	Severe: excess humus, ponding.	Severe: flooding, ponding, low strength.	Severe: flooding, ponding, low strength.	Severe: flooding, ponding, low strength.	Severe: ponding, flooding.	Severe: ponding, flooding, excess humus.
24---------------- Mandarin	Severe: cutbanks cave, wetness.	Moderate: wetness.	Severe: wetness.	Moderate: wetness.	Moderate: wetness.	Moderate: wetness, droughty.
25---------------- Meggett	Severe: wetness.	Severe: flooding, wetness, shrink-swell.	Severe: flooding, wetness, shrink-swell.	Severe: flooding, wetness, shrink-swell.	Severe: shrink-swell, wetness, flooding.	Severe: wetness.

Table 8.--Building Site Development--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
26: Ocilla	Severe: cutbanks cave, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding.	Moderate: wetness, droughty, flooding.
27: Pelham	Severe: cutbanks cave, wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
28: Plummer	Severe: cutbanks cave, wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness, droughty.
30:						
Pantego	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.
Bayboro	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: low strength, ponding.	Severe: ponding.
31:						
Pickney	Severe: cutbanks cave, ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.
Pamlico	Severe: cutbanks cave, excess humus, ponding.	Severe: flooding, ponding, low strength.	Severe: flooding, ponding.	Severe: flooding, ponding, low strength.	Severe: low strength, ponding.	Severe: ponding, excess humus.
32: Rains	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
33: Resota	Severe: cutbanks cave.	Slight	Moderate: wetness.	Slight	Slight	Severe: droughty.
34:						
Pickney	Severe: cutbanks cave, ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.
Rutlege	Severe: cutbanks cave, ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding, droughty.
35: Stilson	Severe: cutbanks cave.	Slight	Moderate: wetness.	Slight	Slight	Moderate: droughty.
36: Sapelo	Severe: cutbanks cave, wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness, droughty.
37: Scranton	Severe: cutbanks cave, wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.

Table 8.--Building Site Development--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
38---------------- Meadowbrook	Severe: cutbanks cave, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: wetness, flooding.	Severe: wetness, droughty.
39---------------- Surrency	Severe: cutbanks cave, ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.
40---------------- Brickyard	Severe: excess humus, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness, low strength.	Severe: flooding, wetness.	Severe: low strength, wetness, flooding.	Severe: wetness, flooding, too clayey.
41:						
Brickyard--------	Severe: excess humus, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness, low strength.	Severe: flooding, wetness.	Severe: low strength, wetness, flooding.	Severe: wetness, flooding, too clayey.
Chowan-----------	Severe: excess humus, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness, low strength.	Severe: flooding, wetness.	Severe: low strength, wetness, flooding.	Severe: wetness, flooding.
Kenner-----------	Severe: excess humus, ponding.	Severe: flooding, subsides, ponding.	Severe: flooding, subsides, ponding.	Severe: flooding, subsides, ponding.	Severe: flooding, ponding, subsides.	Severe: flooding, ponding, excess humus.
42---------------- Pottsburg	Severe: cutbanks cave, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: wetness.	Severe: wetness, droughty.
44:						
Pamlico----------	Severe: cutbanks cave, excess humus, ponding.	Severe: flooding, ponding, low strength.	Severe: flooding, ponding.	Severe: flooding, ponding.	Severe: low strength, flooding, ponding.	Severe: ponding, flooding.
Pickney----------	Severe: cutbanks cave, ponding.	Severe: flooding, ponding.	Severe: flooding, ponding.	Severe: flooding, ponding.	Severe: flooding, ponding.	Severe: flooding, ponding.
45:						
Croatan----------	Severe: excess humus, wetness.	Severe: subsides, flooding, wetness.	Severe: subsides, flooding, wetness.	Severe: subsides, flooding, wetness.	Severe: subsides, wetness, flooding.	Severe: wetness, flooding.
Surrency---------	Severe: cutbanks cave, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: wetness, flooding.	Severe: wetness, flooding.
46:						
Corolla----------	Severe: cutbanks cave, wetness.	Severe: flooding.	Severe: flooding, wetness.	Severe: flooding.	Moderate: wetness, flooding.	Severe: droughty.

Table 8.--Building Site Development--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
46:						
Duckston	Severe: cutbanks cave, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: wetness, flooding.	Severe: excess salt, wetness.
47:						
Newhan	Severe: cutbanks cave, slope.	Severe: flooding, slope.	Severe: flooding, slope.	Severe: flooding, slope.	Severe: slope.	Severe: excess salt, droughty.
Corolla	Severe: cutbanks cave, wetness.	Severe: flooding.	Severe: flooding, wetness.	Severe: flooding.	Moderate: wetness, flooding.	Severe: droughty.
48:						
Kureb	Severe: cutbanks cave.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: slope.	Severe: droughty.
Corolla	Severe: cutbanks cave, wetness.	Severe: flooding.	Severe: flooding, wetness.	Severe: flooding.	Moderate: wetness, flooding.	Severe: droughty.
49 Quartzipsamments	Severe: cutbanks cave.	Slight	Slight	Moderate: slope.	Slight	Severe: droughty.
50:						
Wahee	Severe: wetness.	Severe: flooding.	Severe: flooding, wetness.	Severe: flooding.	Severe: flooding.	Severe: flooding.
Mantachie	Severe: wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding.	Moderate: wetness, flooding.
Ochlockonee	Moderate: wetness.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Moderate: flooding.
51:						
Kenansville	Severe: cutbanks cave.	Slight	Slight	Slight	Slight	Moderate: droughty.
Eulonia	Severe: wetness.	Moderate: wetness.	Severe: wetness.	Moderate: wetness.	Severe: low strength.	Moderate: wetness.
52 Dothan	Moderate: wetness.	Slight	Moderate: wetness.	Slight	Slight	Moderate: droughty.

Table 9.--Sanitary Facilities

(Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "slight," "good," and other terms. Absence of an entry indicates that the soil was not rated. The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation.)

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
2------------------- Albany	Severe: wetness.	Severe: seepage, wetness.	Severe: wetness, too sandy.	Severe: seepage, wetness.	Poor: too sandy, wetness.
3------------------- Alapaha	Severe: wetness, percs slowly.	Severe: seepage, wetness.	Severe: wetness.	Severe: seepage, wetness.	Poor: wetness.
4------------------- Aquents	Severe: wetness, poor filter.	Severe: seepage, wetness.	Severe: seepage, wetness, too sandy.	Severe: seepage, wetness.	Poor: seepage, too sandy, wetness.
5------------------- Bladen	Severe: wetness, percs slowly.	Slight-----------	Severe: wetness, too clayey.	Severe: wetness.	Poor: too clayey, hard to pack, wetness.
6------------------- Blanton	Moderate: wetness.	Severe: seepage.	Severe: too sandy.	Severe: seepage.	Poor: too sandy.
7:					
Bayvi--------------	Severe: flooding, wetness, poor filter.	Severe: seepage, flooding.	Severe: flooding, seepage, wetness.	Severe: flooding, seepage, wetness.	Poor: seepage, too sandy, wetness.
Dirego-------------	Severe: flooding, wetness, poor filter.	Severe: seepage, flooding, excess humus.	Severe: flooding, seepage, wetness.	Severe: flooding, seepage, wetness.	Poor: seepage, too sandy, wetness.
8------------------- Beaches	Severe: flooding, wetness, poor filter.	Severe: seepage, flooding.	Severe: flooding, seepage, wetness.	Severe: flooding, seepage, wetness.	Poor: seepage, too sandy, wetness.
9------------------- Ridgewood	Severe: wetness, poor filter.	Severe: seepage, wetness.	Severe: seepage, wetness, too sandy.	Severe: seepage, wetness.	Poor: seepage, too sandy.
10------------------ Corolla	Severe: wetness, poor filter.	Severe: seepage, wetness.	Severe: seepage, wetness, too sandy.	Severe: seepage, wetness.	Poor: seepage, too sandy.
11------------------ Clarendon	Severe: wetness, percs slowly.	Severe: seepage, wetness.	Severe: wetness.	Severe: wetness.	Fair: wetness.

Table 9.--Sanitary Facilities--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
12:					
Dothan	Severe: wetness, percs slowly.	Moderate: seepage, slope.	Moderate: wetness.	Slight	Good.
Fuquay	Severe: percs slowly, poor filter.	Severe: seepage.	Moderate: too sandy.	Severe: seepage.	Poor: seepage.
13:					
Dorovan	Severe: subsides, ponding.	Severe: excess humus, ponding.	Severe: seepage, ponding.	Severe: ponding.	Poor: ponding, excess humus.
Croatan	Severe: wetness, percs slowly.	Severe: seepage, excess humus.	Severe: wetness, too acid.	Severe: seepage, wetness.	Poor: wetness.
14:					
Duckston	Severe: flooding, wetness, poor filter.	Severe: seepage, flooding, wetness.	Severe: flooding, seepage, wetness.	Severe: flooding, seepage, wetness.	Poor: seepage, too sandy, wetness.
Duckston, depressional	Severe: flooding, ponding, poor filter.	Severe: seepage, flooding, ponding.	Severe: flooding, seepage, ponding.	Severe: flooding, seepage, ponding.	Poor: seepage, too sandy, ponding.
15 Wahee	Severe: wetness, percs slowly.	Slight	Severe: wetness, too clayey.	Severe: wetness.	Poor: too clayey, hard to pack, wetness.
16 Ortega	Moderate: wetness.	Severe: seepage.	Severe: seepage, wetness, too sandy.	Severe: seepage.	Poor: seepage, too sandy.
17 Fuquay	Severe: percs slowly, poor filter.	Severe: seepage.	Moderate: too sandy.	Severe: seepage.	Poor: seepage.
19 Lucy	Slight	Severe: seepage.	Slight	Severe: seepage.	Fair: too clayey.
20 Lynn Haven	Severe: wetness, poor filter.	Severe: seepage, wetness.	Severe: seepage, wetness, too sandy.	Severe: seepage, wetness.	Poor: seepage, too sandy, wetness.
21 Leefield	Severe: wetness, percs slowly.	Severe: seepage, wetness.	Severe: wetness.	Severe: seepage, wetness.	Fair: wetness.
22 Leon	Severe: wetness, poor filter.	Severe: seepage, wetness.	Severe: wetness, too sandy, too acid.	Severe: seepage, wetness.	Poor: seepage, too sandy, wetness.

Table 9.--Sanitary Facilities--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
23------------------ Maurepas	Severe: flooding, ponding, poor filter.	Severe: seepage, flooding, excess humus.	Severe: flooding, seepage, ponding.	Severe: flooding, seepage, ponding.	Severe: flooding, seepage, ponding.
24------------------ Mandarin	Severe: wetness, poor filter.	Severe: seepage, wetness.	Severe: wetness, too sandy.	Severe: wetness, seepage.	Poor: seepage, too sandy.
25------------------ Meggett	Severe: flooding, wetness, percs slowly.	Severe: flooding.	Severe: flooding, wetness, too clayey.	Severe: flooding, wetness.	Poor: too clayey, hard to pack, wetness.
26------------------ Ocilla	Severe: flooding, wetness.	Severe: seepage, flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, seepage, wetness.	Fair: wetness.
27------------------ Pelham	Severe: wetness.	Severe: seepage, wetness.	Severe: wetness.	Severe: seepage, wetness.	Poor: wetness.
28------------------ Plummer	Severe: wetness, poor filter.	Severe: seepage, wetness.	Severe: wetness, too sandy.	Severe: seepage, wetness.	Poor: too sandy, wetness.
30:					
Pantego------------	Severe: ponding, percs slowly.	Severe: ponding.	Severe: ponding, too acid.	Severe: ponding.	Poor: ponding, too acid.
Bayboro------------	Severe: ponding, percs slowly.	Severe: ponding.	Severe: ponding, too clayey, too acid.	Severe: ponding.	Poor: too clayey, hard to pack, ponding.
31:					
Pickney------------	Severe: ponding, poor filter.	Severe: ponding, seepage.	Severe: seepage, ponding, too sandy.	Severe: ponding, seepage.	Poor: seepage, too sandy, ponding.
Pamlico------------	Severe: ponding, poor filter.	Severe: seepage, excess humus, ponding.	Severe: seepage, ponding, too sandy.	Severe: seepage, ponding.	Poor: seepage, too sandy, ponding.
32------------------ Rains	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Poor: wetness.
33------------------ Resota	Moderate: wetness.	Severe: seepage.	Severe: seepage, wetness.	Severe: seepage.	Poor: seepage, too sandy.
34:					
Pickney------------	Severe: ponding, poor filter.	Severe: ponding, seepage.	Severe: seepage, ponding, too sandy.	Severe: ponding, seepage.	Poor: seepage, too sandy, ponding.

Table 9.--Sanitary Facilities--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
34:					
Rutlege	Severe: ponding, poor filter.	Severe: seepage, ponding.	Severe: seepage, ponding, too sandy.	Severe: seepage, ponding.	Poor: seepage, too sandy, ponding.
35 Stilson	Severe: wetness.	Severe: seepage, wetness.	Moderate: wetness.	Severe: seepage.	Fair: wetness.
36 Sapelo	Severe: wetness.	Severe: seepage, wetness.	Severe: wetness, too sandy.	Severe: seepage, wetness.	Poor: seepage, too sandy, wetness.
37 Scranton	Severe: wetness, poor filter.	Severe: seepage, wetness.	Severe: seepage, wetness, too sandy.	Severe: seepage, wetness.	Poor: seepage, too sandy, wetness.
38 Meadowbrook	Severe: flooding, wetness, percs slowly.	Severe: seepage, flooding, wetness.	Severe: flooding, wetness, too sandy.	Severe: flooding, seepage, wetness.	Poor: seepage, too sandy, wetness.
39 Surrency	Severe: ponding.	Severe: seepage, ponding.	Severe: ponding, too sandy.	Severe: seepage, ponding.	Poor: too sandy, ponding.
40 Brickyard	Severe: flooding, wetness, percs slowly.	Severe: flooding.	Severe: flooding, wetness, too clayey.	Severe: flooding, wetness.	Poor: too clayey, hard to pack, wetness.
41:					
Brickyard	Severe: flooding, wetness, percs slowly.	Severe: flooding.	Severe: flooding, wetness, too clayey.	Severe: flooding, wetness.	Poor: too clayey, hard to pack, wetness.
Chowan	Severe: flooding, wetness, percs slowly.	Severe: seepage, flooding, excess humus.	Severe: flooding, seepage, wetness.	Severe: flooding, seepage, wetness.	Poor: wetness, excess humus, too acid.
Kenner	Severe: subsides, flooding, ponding.	Severe: flooding, seepage, excess humus.	Severe: flooding, seepage, ponding.	Severe: flooding, seepage, ponding.	Poor: ponding, excess humus.
42 Pottsburg	Severe: wetness, poor filter.	Severe: seepage, wetness.	Severe: wetness, too sandy.	Severe: seepage, wetness.	Poor: seepage, too sandy, wetness.
44:					
Pamlico	Severe: flooding, ponding, poor filter.	Severe: seepage, flooding, excess humus.	Severe: flooding, seepage, ponding.	Severe: flooding, seepage, ponding.	Poor: seepage, excess humus, ponding.

Table 9.--Sanitary Facilities--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
44:					
Pickney	Severe: flooding, ponding, poor filter.	Severe: flooding, ponding, seepage.	Severe: flooding, seepage, ponding.	Severe: flooding, ponding, seepage.	Poor: too sandy, seepage, ponding.
45:					
Croatan	Severe: flooding, wetness, percs slowly.	Severe: seepage, flooding, excess humus.	Severe: flooding, wetness, too acid.	Severe: flooding, seepage, wetness.	Poor: wetness.
Surrency	Severe: flooding, wetness.	Severe: seepage, flooding, wetness.	Severe: flooding, wetness, too sandy.	Severe: flooding, seepage, wetness.	Poor: too sandy, wetness.
46:					
Corolla	Severe: wetness, poor filter.	Severe: seepage, wetness.	Severe: seepage, wetness, too sandy.	Severe: seepage, wetness.	Poor: seepage, too sandy.
Duckston	Severe: flooding, wetness, poor filter.	Severe: seepage, flooding, wetness.	Severe: flooding, seepage, wetness.	Severe: flooding, seepage, wetness.	Poor: seepage, too sandy, wetness.
47:					
Newhan	Severe: poor filter, slope.	Severe: seepage, flooding, slope.	Severe: seepage, slope, too sandy.	Severe: seepage, slope.	Poor: seepage, too sandy, slope.
Corolla	Severe: wetness, poor filter.	Severe: seepage, wetness.	Severe: seepage, wetness, too sandy.	Severe: seepage, wetness.	Poor: seepage, too sandy.
48:					
Kureb	Severe: poor filter.	Severe: seepage, slope.	Severe: seepage, too sandy.	Severe: seepage.	Poor: seepage, too sandy.
Corolla	Severe: wetness, poor filter.	Severe: seepage, wetness.	Severe: seepage, wetness, too sandy.	Severe: seepage, wetness.	Poor: seepage, too sandy.
49 Quartzipsamments	Severe: poor filter.	Severe: seepage.	Severe: seepage, too sandy.	Severe: seepage.	Poor: seepage, too sandy.
50:					
Wahee	Severe: flooding, wetness, percs slowly.	Severe: flooding.	Severe: flooding, wetness.	Severe: flooding, wetness.	Fair: too clayey, hard to pack, wetness.

Table 9.--Sanitary Facilities--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
50:					
Mantachie----------	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Poor: wetness.
Ochlockonee--------	Severe: flooding, wetness.	Severe: seepage, flooding, wetness.	Severe: flooding, seepage, wetness.	Severe: flooding, wetness.	Fair: wetness.
51:					
Kenansville--------	Severe: poor filter.	Severe: seepage.	Severe: seepage, too sandy.	Severe: seepage.	Poor: seepage, too sandy.
Eulonia------------	Severe: wetness, percs slowly.	Moderate: seepage.	Severe: wetness, too clayey.	Severe: wetness.	Poor: too clayey.
52------------------ Dothan	Severe: wetness, percs slowly.	Moderate: seepage, slope.	Moderate: wetness.	Slight-----------	Good.

Table 10.--Construction Materials

(Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "good," "fair," and other terms. Absence of an entry indicates that the soil was not rated. The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation.)

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
2 Albany	Fair: wetness.	Probable	Improbable: too sandy.	Poor: too sandy.
3 Alapaha	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness.
4 Aquents	Poor: wetness.	Probable	Improbable: too sandy.	Poor: too sandy, wetness.
5 Bladen	Poor: low strength, wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, wetness.
6 Blanton	Good	Probable	Improbable: too sandy.	Poor: too sandy.
7:				
Bayvi	Poor: wetness.	Probable	Improbable: too sandy.	Poor: too sandy, excess salt, wetness.
Dirego	Poor: wetness.	Probable	Improbable: too sandy.	Poor: excess humus, excess salt, wetness.
8 Beaches	Poor: wetness.	Probable	Improbable: too sandy.	Poor: area reclaim, too sandy, excess salt.
9 Ridgewood	Fair: wetness.	Probable	Improbable: too sandy.	Poor: too sandy.
10 Corolla	Fair: wetness.	Probable	Improbable: too sandy.	Poor: too sandy.
11 Clarendon	Fair: wetness.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey, small stones.
12:				
Dothan	Good	Improbable: excess fines.	Improbable: excess fines.	Fair: thin layer.
Fuquay	Good	Improbable: thin layer.	Improbable: too sandy.	Fair: too sandy, small stones.

Table 10.--Construction Materials--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
13:				
Dorovan	Poor: wetness.	Probable	Improbable: too sandy.	Poor: excess humus, wetness.
Croatan	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: excess humus, wetness.
14:				
Duckston	Poor: wetness.	Probable	Improbable: too sandy.	Poor: too sandy, wetness.
Duckston, depressional	Poor: wetness.	Probable	Improbable: too sandy.	Poor: too sandy, wetness,
15 Wahee	Poor: low strength, wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, wetness.
16 Ortega	Good	Probable	Improbable: too sandy.	Poor: too sandy.
17 Fuquay	Good	Improbable: thin layer.	Improbable: too sandy.	Fair: too sandy, small stones.
19 Lucy	Good	Improbable: excess fines.	Improbable: excess fines.	Fair: too sandy.
20 Lynn Haven	Poor: wetness.	Probable	Improbable: too sandy.	Poor: too sandy, wetness.
21 Leefield	Fair: wetness.	Improbable: excess fines.	Improbable: excess fines.	Fair: too sandy.
22 Leon	Poor: wetness.	Probable	Improbable: too sandy.	Poor: too sandy, wetness.
23 Maurepas	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: excess humus, wetness.
24 Mandarin	Fair: wetness.	Probable	Improbable: too sandy.	Poor: too sandy.
25 Meggett	Poor: wetness, shrink-swell.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, wetness.
26 Ocilla	Fair: wetness.	Improbable: excess fines.	Improbable: excess fines.	Fair: too sandy.
27 Pelham	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness.

Table 10.--Construction Materials--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
28: Plummer	Poor: wetness.	Probable	Improbable: too sandy.	Poor: too sandy, wetness.
30:				
Pantego	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness.
Bayboro	Poor: low strength, wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, wetness.
31:				
Pickney	Poor: wetness.	Probable	Improbable: too sandy.	Poor: too sandy, wetness.
Pamlico	Poor: low strength, wetness.	Probable	Improbable: too sandy.	Poor: excess humus, wetness.
32: Rains	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness.
33: Resota	Good	Probable	Improbable: too sandy.	Poor: too sandy.
34:				
Pickney	Poor: wetness.	Probable	Improbable: too sandy.	Poor: too sandy, wetness.
Rutlege	Poor: wetness.	Probable	Improbable: too sandy.	Poor: too sandy, wetness.
35: Stilson	Fair: wetness.	Improbable: excess fines.	Improbable: excess fines.	Fair: too sandy.
36: Sapelo	Poor: wetness.	Improbable: excess fines.	Improbable: too sandy.	Poor: too sandy, wetness.
37: Scranton	Poor: wetness.	Probable	Improbable: too sandy.	Poor: too sandy, wetness.
38: Meadowbrook	Poor: wetness.	Improbable: thin layer.	Improbable: too sandy.	Poor: too sandy, wetness.
39: Surrency	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: too sandy, wetness.
40: Brickyard	Poor: low strength, wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, wetness.

Table 10.--Construction Materials--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
41:				
Brickyard	Poor: low strength, wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, wetness.
Chowan	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness.
Kenner	Poor: wetness.	Improbable: excess humus.	Improbable: excess humus.	Poor: excess humus, wetness.
42 Pottsburg	Poor: wetness.	Probable	Improbable: too sandy.	Poor: too sandy, wetness.
44:				
Pamlico	Poor: low strength, wetness.	Probable	Improbable: too sandy.	Poor: excess humus, wetness.
Pickney	Poor: wetness.	Probable	Improbable: too sandy.	Poor: too sandy, wetness.
45:				
Croatan	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: excess humus, wetness.
Surrency	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: too sandy, wetness.
46:				
Corolla	Fair: wetness.	Probable	Improbable: too sandy.	Poor: too sandy.
Duckston	Poor: wetness.	Probable	Improbable: too sandy.	Poor: too sandy, wetness.
47:				
Newhan	Fair: slope.	Probable	Improbable: too sandy.	Poor: too sandy, excess salt.
Corolla	Fair: wetness.	Probable	Improbable: too sandy.	Poor: too sandy.
48:				
Kureb	Good	Probable	Improbable: too sandy.	Poor: too sandy, too acid.
Corolla	Fair: wetness.	Probable	Improbable: too sandy.	Poor: too sandy.
49 Quartzipsamments	Good	Probable	Improbable: too sandy.	Poor: too sandy.

Table 10.--Construction Materials--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
50:				
Wahee	Fair: low strength, shrink-swell, wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
Mantachie	Fair: wetness.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey, small stones.
Ochlockonee	Good	Improbable: excess fines.	Improbable: excess fines.	Good.
51:				
Kenansville	Good	Probable	Improbable: too sandy.	Fair: too sandy.
Eulonia	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
52 Dothan	Good	Improbable: excess fines.	Improbable: excess fines.	Fair: thin layer.

Table 11.--Water Management

(Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "slight," "moderate," and "severe." Absence of an entry indicates that the soil was not evaluated. The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation.)

Soil name and map symbol	Limitations for--			Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
2: Albany	Severe: seepage.	Severe: seepage, piping, wetness.	Severe: slow refill, cutbanks cave.	Severe: slow refill, cutbanks cave.	Wetness, droughty.	Wetness, too sandy, soil blowing.	Wetness, droughty.
3: Alapaha	Severe: seepage.	Severe: seepage, piping, wetness.	Severe: slow refill, cutbanks cave.	Cutbanks cave	Wetness, droughty, fast intake.	Wetness, soil blowing.	Wetness, droughty.
4: Aquents	Severe: seepage.	Severe: seepage, piping, wetness.	Severe: cutbanks cave.	Cutbanks cave	Wetness, droughty, fast intake.	Wetness, too sandy, soil blowing.	Wetness, droughty.
5: Bladen	Slight	Severe: wetness.	Severe: slow refill.	Percs slowly	Wetness, percs slowly.	Wetness, percs slowly.	Wetness, percs slowly.
6: Blanton	Severe: seepage.	Severe: seepage, piping.	Severe: no water.	Deep to water	Droughty, fast intake.	Too sandy, soil blowing.	Droughty.
7:							
Bayvi	Severe: seepage.	Severe: seepage, piping, wetness.	Severe: salty water, cutbanks cave.	Flooding, cutbanks cave, excess salt.	Wetness, droughty, fast intake.	Wetness, too sandy, soil blowing.	Wetness, excess salt, droughty.
Dirego	Severe: seepage.	Severe: seepage, piping, wetness.	Severe: salty water, cutbanks cave.	Flooding, subsides, cutbanks cave.	Wetness, droughty, soil blowing.	Wetness, too sandy, soil blowing.	Wetness, excess salt, droughty.
8: Beaches	Severe: seepage.	Severe: seepage, piping, wetness.	Severe: salty water, cutbanks cave.	Flooding, cutbanks cave.	Wetness, droughty.	Wetness, too sandy.	Wetness, excess salt.
9: Ridgewood	Severe: seepage.	Severe: seepage, piping.	Severe: cutbanks cave.	Cutbanks cave	Wetness, droughty.	Wetness, too sandy, soil blowing.	Droughty.
10: Corolla	Severe: seepage.	Severe: seepage, piping, wetness.	Severe: cutbanks cave.	Slope, cutbanks cave.	Slope, wetness, droughty.	Wetness, too sandy.	Droughty.
11: Clarendon	Moderate: seepage, slope.	Severe: piping.	Severe: slow refill, cutbanks cave.	Slope	Slope, wetness, droughty.	Wetness, soil blowing.	Droughty.

Table 11.--Water Management--Continued

Soil name and map symbol	Limitations for-- Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Features affecting-- Drainage	Irrigation	Terraces and diversions	Grassed waterways
12:							
Dothan-------	Moderate: seepage, slope.	Moderate: piping.	Severe: no water.	Deep to water	Fast intake, slope, droughty.	Favorable-----	Droughty.
Fuquay-------	Severe: seepage.	Severe: seepage, piping.	Severe: no water.	Deep to water	Slope, droughty, fast intake.	Too sandy, soil blowing.	Droughty.
13:							
Dorovan------	Moderate: seepage.	Severe: excess humus, ponding.	Severe: cutbanks cave.	Ponding, subsides.	Ponding, soil blowing.	Ponding, soil blowing.	Wetness.
Croatan------	Severe: seepage.	Severe: piping, wetness.	Severe: slow refill.	Percs slowly, subsides.	Wetness, soil blowing, percs slowly.	Wetness, soil blowing.	Wetness, percs slowly.
14:							
Duckston-----	Severe: seepage.	Severe: seepage, piping, wetness.	Severe: cutbanks cave.	Flooding, cutbanks cave, excess salt.	Wetness, droughty, fast intake.	Wetness, too sandy, soil blowing.	Wetness, excess salt, droughty.
Duckston, depressional	Severe: seepage.	Severe: seepage, piping, ponding.	Severe: cutbanks cave.	Ponding, flooding, cutbanks cave.	Ponding, droughty, fast intake.	Ponding, too sandy.	Wetness, excess salt, droughty.
15------------ Wahee	Slight-----	Severe: hard to pack, wetness.	Severe: slow refill.	Percs slowly---	Wetness, soil blowing.	Wetness, soil blowing, percs slowly.	Wetness, percs slowly.
16------------ Ortega	Severe: seepage.	Severe: seepage, piping.	Severe: cutbanks cave.	Deep to water	Droughty, fast intake.	Too sandy, soil blowing.	Droughty.
17------------ Fuquay	Severe: seepage.	Severe: seepage, piping.	Severe: no water.	Deep to water	Droughty, fast intake, soil blowing.	Too sandy, soil blowing.	Droughty.
19------------ Lucy	Severe: seepage.	Severe: piping.	Severe: no water.	Deep to water	Droughty, fast intake.	Soil blowing--	Droughty.
20------------ Lynn Haven	Severe: seepage.	Severe: seepage, piping, wetness.	Severe: cutbanks cave.	Cutbanks cave	Wetness, droughty.	Wetness, too sandy, soil blowing.	Wetness, droughty.
21------------ Leefield	Moderate: seepage.	Severe: piping, wetness.	Severe: slow refill, cutbanks cave.	Favorable------	Wetness, droughty, fast intake.	Wetness, soil blowing.	Droughty.
22------------ Leon	Severe: seepage.	Severe: seepage, piping, wetness.	Severe: slow refill, cutbanks cave.	Cutbanks cave, too acid.	Wetness, droughty.	Wetness, too sandy, soil blowing.	Wetness, droughty.

Table 11.--Water Management--Continued

Soil name and map symbol	Limitations for-- Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Features affecting-- Drainage	Irrigation	Terraces and diversions	Grassed waterways
23------------ Maurepas	Severe: seepage.	Severe: excess humus, ponding.	Slight---------	Ponding, flooding, subsides.	Ponding, flooding.	Ponding-------	Wetness.
24------------ Mandarin	Severe: seepage.	Severe: seepage, piping, wetness.	Severe: cutbanks cave.	Cutbanks cave	Wetness, droughty, fast intake.	Too sandy, soil blowing, wetness.	Droughty.
25------------ Meggett	Slight-----	Severe: hard to pack, wetness.	Severe: slow refill.	Percs slowly, flooding.	Wetness, percs slowly.	Wetness, soil blowing, percs slowly.	Wetness, percs slowly.
26------------ Ocilla	Severe: seepage.	Severe: piping, wetness.	Severe: cutbanks cave.	Flooding-------	Wetness, droughty, fast intake.	Wetness, soil blowing.	Droughty.
27------------ Pelham	Severe: seepage.	Severe: piping, wetness.	Severe: cutbanks cave.	Favorable------	Fast intake, wetness.	Wetness, soil blowing.	Wetness.
28------------ Plummer	Severe: seepage.	Severe: seepage, piping, wetness.	Severe: cutbanks cave.	Cutbanks cave	Wetness, fast intake.	Wetness, too sandy, soil blowing.	Wetness, droughty.
30:							
Pantego------	Moderate: seepage.	Severe: ponding.	Severe: slow refill.	Ponding, too acid.	Ponding-------	Ponding-------	Wetness.
Bayboro------	Slight-----	Severe: ponding.	Severe: slow refill.	Ponding, percs slowly, too acid.	Ponding, percs slowly.	Ponding, percs slowly.	Wetness, percs slowly.
31:							
Pickney------	Severe: seepage.	Severe: seepage, piping, ponding.	Severe: cutbanks cave.	Cutbanks cave, ponding.	Droughty, fast intake, ponding.	Ponding, too sandy, soil blowing.	Wetness, droughty.
Pamlico------	Severe: seepage.	Severe: seepage, piping, ponding.	Severe: cutbanks cave.	Ponding, subsides, cutbanks cave.	Ponding, soil blowing.	Ponding, too sandy, soil blowing.	Wetness.
32------------ Rains	Moderate: seepage.	Severe: piping, wetness.	Moderate: slow refill.	Favorable------	Wetness-------	Wetness, soil blowing.	Wetness.
33------------ Resota	Severe: seepage.	Severe: seepage, piping.	Severe: cutbanks cave.	Deep to water	Droughty, fast intake.	Too sandy, soil blowing.	Droughty.
34:							
Pickney------	Severe: seepage.	Severe: seepage, piping, ponding.	Severe: cutbanks cave.	Cutbanks cave, ponding.	Droughty, fast intake, ponding.	Ponding, too sandy, soil blowing.	Wetness, droughty.

Table 11.--Water Management--Continued

Soil name and map symbol	Limitations for-- Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Features affecting-- Drainage	Irrigation	Terraces and diversions	Grassed waterways
34:							
Rutlege	Severe: seepage.	Severe: seepage, ponding.	Severe: cutbanks cave.	Ponding, cutbanks cave.	Ponding, droughty.	Ponding, too sandy.	Wetness.
35 Stilson	Moderate: seepage.	Severe: piping.	Severe: cutbanks cave.	Favorable	Wetness, droughty.	Wetness, soil blowing.	Droughty.
36 Sapelo	Severe: seepage.	Severe: seepage, piping, wetness.	Severe: cutbanks cave.	Cutbanks cave	Wetness, droughty, fast intake.	Wetness, too sandy, soil blowing.	Wetness, droughty.
37 Scranton	Severe: seepage.	Severe: seepage, piping, wetness.	Severe: cutbanks cave.	Cutbanks cave	Wetness, droughty, fast intake.	Wetness, too sandy, soil blowing.	Wetness, droughty.
38 Meadowbrook	Severe: seepage.	Severe: seepage, piping, wetness.	Severe: slow refill, cutbanks cave.	Flooding, cutbanks cave.	Wetness, droughty.	Wetness, too sandy, soil blowing.	Wetness, droughty.
39 Surrency	Severe: seepage.	Severe: seepage, piping, ponding.	Severe: slow refill, cutbanks cave.	Ponding, cutbanks cave.	Ponding, droughty, fast intake.	Ponding, too sandy.	Wetness, droughty, rooting depth.
40 Brickyard	Slight	Severe: hard to pack, wetness.	Severe: slow refill.	Percs slowly, flooding.	Wetness, slow intake, percs slowly.	Erodes easily, wetness.	Wetness, erodes easily, percs slowly.
41:							
Brickyard	Slight	Severe: hard to pack, wetness.	Severe: slow refill.	Percs slowly, flooding.	Wetness, slow intake, percs slowly.	Erodes easily, wetness.	Wetness, erodes easily, percs slowly.
Chowan	Severe: seepage.	Severe: excess humus, wetness.	Severe: slow refill.	Flooding, subsides.	Wetness, flooding, too acid.	Wetness	Wetness.
Kenner	Severe: seepage.	Severe: excess humus, ponding.	Severe: slow refill.	Ponding, percs slowly, flooding.	Flooding, ponding, percs slowly.	Ponding	Wetness, percs slowly.
42 Pottsburg	Severe: seepage.	Severe: seepage, piping, wetness.	Severe: cutbanks cave.	Cutbanks cave	Wetness, droughty, fast intake.	Wetness, too sandy, soil blowing.	Wetness, droughty.
44:							
Pamlico	Severe: seepage.	Severe: seepage, piping, ponding.	Severe: cutbanks cave.	Ponding, flooding, subsides.	Ponding, flooding.	Ponding, too sandy, soil blowing.	Wetness.
Pickney	Severe: seepage.	Severe: seepage, piping, ponding.	Severe: cutbanks cave.	Cutbanks cave, flooding, ponding.	Ponding, droughty, fast intake.	Ponding, too sandy, soil blowing.	Wetness, droughty.

Table 11.--Water Management--Continued

Soil name and map symbol	Limitations for-- Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Features affecting-- Drainage	Irrigation	Terraces and diversions	Grassed waterways
45:							
Croatan---------	Severe: seepage.	Severe: piping, wetness.	Severe: slow refill.	Percs slowly, flooding, subsides.	Wetness, soil blowing, percs slowly.	Wetness, soil blowing.	Wetness, percs slowly.
Surrency--------	Severe: seepage.	Severe: seepage, piping, wetness.	Severe: slow refill, cutbanks cave.	Flooding, cutbanks cave.	Wetness, droughty, fast intake.	Too sandy, wetness.	Wetness, droughty, rooting depth.
46:							
Corolla---------	Severe: seepage.	Severe: seepage, piping, wetness.	Severe: cutbanks cave.	Slope, cutbanks cave.	Slope, wetness, droughty.	Wetness, too sandy.	Droughty.
Duckston--------	Severe: seepage.	Severe: seepage, piping, wetness.	Severe: cutbanks cave.	Flooding, cutbanks cave, excess salt.	Wetness, droughty, fast intake.	Wetness, too sandy, soil blowing.	Wetness, excess salt, droughty.
47:							
Newhan----------	Severe: seepage, slope.	Severe: seepage, piping.	Severe: no water.	Deep to water	Slope, droughty, fast intake.	Slope, too sandy, soil blowing.	Slope, droughty.
Corolla---------	Severe: seepage.	Severe: seepage, piping, wetness.	Severe: cutbanks cave.	Slope, cutbanks cave.	Slope, wetness, droughty.	Wetness, too sandy.	Droughty.
48:							
Kureb-----------	Severe: seepage, slope.	Severe: seepage, piping.	Severe: no water.	Deep to water	Droughty, fast intake, slope.	Slope, too sandy, soil blowing.	Slope, droughty, rooting depth.
Corolla---------	Severe: seepage.	Severe: seepage, piping, wetness.	Severe: cutbanks cave.	Slope, cutbanks cave.	Slope, wetness, droughty.	Wetness, too sandy.	Droughty.
49--------------- Quartzipsamments	Severe: seepage.	Severe: seepage, piping.	Severe: no water.	Deep to water	Slope, droughty, fast intake.	Too sandy-----	Droughty.
50:							
Wahee-----------	Slight---	Severe: wetness.	Severe: slow refill.	Percs slowly, flooding.	Wetness, percs slowly.	Erodes easily, wetness, percs slowly.	Erodes easily, percs slowly.
Mantachie-------	Moderate: seepage.	Severe: piping, wetness.	Moderate: slow refill.	Flooding-------	Wetness, flooding.	Wetness-------	Wetness.
Ochlocknee------	Severe: seepage.	Severe: piping.	Severe: cutbanks cave.	Deep to water	Flooding-------	Favorable-----	Favorable.

Table 11.--Water Management--Continued

Soil name and map symbol	Limitations for-- Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Features affecting-- Drainage	Irrigation	Terraces and diversions	Grassed waterways
51:							
Kenansville	Severe: seepage.	Severe: seepage, piping.	Severe: no water.	Deep to water	Droughty, fast intake.	Too sandy, soil blowing.	Droughty.
Eulonia	Moderate: seepage.	Severe: wetness.	Severe: slow refill.	Favorable	Wetness	Wetness, soil blowing.	Favorable.
52 Dothan	Moderate: seepage, slope.	Moderate: piping.	Severe: no water.	Deep to water	Fast intake, slope, droughty.	Favorable	Droughty.

Table 12.--Engineering Index Properties

(Absence of an entry indicates that data were not estimated.)

Soil name and map symbol	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Frag- ments 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas- ticity index
	In				Pct					Pct	
2---------------- Albany	0-41	Sand-------------	SM, SP-SM	A-2	0	100	100	75-90	10-20	0-14	NP
	41-80	Sandy clay loam, sandy loam, fine sandy loam.	SC, SM, SC-SM	A-2, A-4, A-6	0	97-100	95-100	70-100	20-50	<40	NP-17
3---------------- Alapaha	0-22	Loamy fine sand	SM	A-2	0	100	99-100	70-95	15-31	<20	NP
	22-64	Sandy loam, sandy clay loam.	SC, SC-SM	A-2, A-4	0	99-100	98-100	70-95	30-45	19-30	5-10
	64-80	Sandy clay loam	SC	A-2, A-4, A-6	0	93-100	88-100	66-90	29-40	20-30	7-12
4---------------- Aquents	0-80	Sand-------------	SP, SP-SM	A-3, A-2-4	0	100	100	75-100	1-12	0-14	NP
5---------------- Bladen	0-12	Fine sandy loam	SM	A-2, A-4	0	100	97-100	60-85	20-50	10-20	NP
	12-43	Clay, sandy clay	CL, CH	A-7	0	100	99-100	75-100	55-85	45-67	23-45
	43-72	Clay, sandy clay, clay loam.	CL, CH, SC	A-4, A-6, A-7	0	100	89-99	75-95	45-75	25-60	8-35
	72-80	Variable---------	---	---	---	---	---	---	---	---	---
6---------------- Blanton	0-60	Sand-------------	SP-SM, SM	A-3, A-2-4	0	100	90-100	65-100	5-20	0-14	NP
	60-72	Sandy loam, loamy sand, loamy coarse sand.	SM	A-2-4	0	100	95-100	65-96	13-30	<25	NP-3
	72-80	Sandy clay loam, sandy loam, sandy clay.	SC, SC-SM, SM	A-4, A-2-4, A-2-6, A-6	0	100	95-100	69-100	25-50	12-45	3-22
7:											
Bayvi-----------	0-26	Fine sand--------	SM, SP-SM	A-3, A-2-4	0	100	100	80-100	5-20	0-14	NP
	26-80	Loamy sand, fine sand, sand.	SM, SP-SM	A-3, A-2-4	0	100	100	80-100	5-20	10-20	NP
Dirego----------	0-19	Muck-------------	PT	A-8	0	---	---	---	---	---	---
	19-80	Fine sand, loamy fine sand, fine sandy loam.	SM, SP-SM	A-3, A-2-4	0	100	100	80-100	6-13	10-20	NP
8---------------- Beaches	0-80	Sand-------------	SP	A-1, A-3	0	100	75-100	5-85	0-5	0-14	NP
9---------------- Ridgewood	0-5	Fine sand--------	SP-SM	A-3, A-2-4	0	100	100	90-100	5-12	0-14	NP
	5-80	Fine sand, sand	SP-SM, SP	A-3, A-2-4	0	100	100	90-100	2-12	0-14	NP
10--------------- Corolla	0-80	Fine sand--------	SW, SP-SM, SP	A-2, A-3	0	80-100	75-100	60-95	1-12	0-14	NP

Table 12.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Frag- ments 3-10 inches	Percentage passing sieve number-- 4	10	40	200	Liquid limit	Plas- ticity index
	In				Pct					Pct	
11--------------- Clarendon	0-10	Loamy fine sand	SM, SP-SM	A-2	0	98-100	85-100	65-90	10-30	<20	NP-3
	10-62	Sandy clay loam	SC, CL, SC-SM, CL-ML	A-4, A-6	0	98-100	85-100	75-95	36-55	20-40	5-15
	62-80	Sandy clay loam, sandy loam, sandy clay.	SC, CL, SC-SM, CL-ML	A-2, A-4, A-6	0	99-100	96-100	80-95	25-55	<40	NP-15
12:											
Dothan----------	0-16	Loamy fine sand	SM	A-2	0	95-100	92-100	60-80	13-30	<20	NP
	16-33	Sandy clay loam, sandy loam, fine sandy loam.	SC-SM, SC, SM	A-2, A-4, A-6	0	95-100	92-100	60-90	23-49	<40	NP-16
	33-80	Sandy clay loam, sandy clay.	SC-SM, SC, CL-ML, CL	A-2, A-4, A-6, A-7	0	95-100	92-100	70-95	30-53	25-45	4-23
Fuquay----------	0-21	Loamy fine sand	SP-SM, SM	A-2, A-3	0	95-100	90-100	50-83	5-35	10-20	NP
	21-42	Sandy loam, fine sandy loam, sandy clay loam.	SM, SC, SC-SM	A-2, A-4, A-6	0	85-100	85-100	70-90	23-45	20-45	NP-13
	42-80	Sandy clay loam	SC, SC-SM, SM	A-2, A-4, A-6, A-7-6	0	95-100	90-100	58-90	28-49	25-45	4-13
13:											
Dorovan---------	0-54	Muck-------------	PT	---	0	---	---	---	---	---	---
	54-80	Sand, loamy sand, loam.	SP-SM, SC-SM, SM	A-1, A-3, A-4, A-2-4	0	100	100	5-70	5-49	<20	NP-7
Croatan---------	0-42	Muck-------------	PT	---	0	---	---	---	---	---	---
	42-46	Sandy loam, fine sandy loam, mucky sandy loam.	SM, SC, SC-SM	A-2, A-4	0	100	100	60-85	25-49	25-35	NP-10
	46-65	Loam, clay loam, sandy clay loam.	CL, SM, ML, SC	A-4, A-6	0	100	100	75-100	36-95	18-45	NP-15
	65-80	Variable---------	---	---	---	---	---	---	---	---	---
14:											
Duckston--------	0-8	Sand-------------	SP-SM, SP	A-2, A-3	0	100	95-100	60-75	3-12	10-15	NP
	8-80	Sand, fine sand	SP-SM, SP	A-2, A-3	0	100	95-100	60-75	3-12	10-15	NP
Duckston, depressional---	0-8	Mucky sand-------	SP-SM, SP	A-2-4, A-3	0	100	95-100	60-75	3-12	10-15	NP
	8-80	Sand, fine sand	SP-SM, SP	A-2, A-3	0	100	95-100	60-75	3-12	10-15	NP
15--------------- Wahee	0-12	Fine sandy loam	SM, SC-SM	A-2, A-4	0	100	95-100	50-98	30-50	<28	NP-7
	12-72	Clay, clay loam, silty clay.	CL, CH	A-6, A-7	0	100	100	85-100	51-92	38-81	16-54
	72-80	Variable---------	---	---	---	---	---	---	---	---	---
16--------------- Ortega	0-7	Fine sand--------	SP, SP-SM	A-3	0	100	100	90-100	3-8	0-14	NP
	7-80	Fine sand, sand	SP, SP-SM	A-3	0	100	100	90-100	2-7	0-14	NP

Table 12.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Frag- ments 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas- ticity index
	In				Pct					Pct	
17--------------- Fuquay	0-21	Loamy fine sand	SP-SM, SM	A-2, A-3	0	95-100	90-100	50-83	5-35	10-20	NP
	21-42	Sandy loam, fine sandy loam, sandy clay loam.	SM, SC, SC-SM	A-2, A-4, A-6	0	85-100	85-100	70-90	23-45	20-45	NP-13
	42-80	Sandy clay loam	SC, SC-SM, SM	A-2, A-4, A-6, A-7-6	0	95-100	90-100	58-90	28-49	25-45	4-13
19--------------- Lucy	0-30	Loamy fine sand	SM, SP-SM	A-2, A-4	0	98-100	95-100	50-90	10-40	10-20	NP
	30-37	Sandy loam, fine sandy loam, sandy clay loam.	SM, SC, SC-SM	A-2, A-4, A-6	0	97-100	95-100	55-95	15-50	10-30	NP-15
	37-80	Sandy clay loam, clay loam, sandy clay.	SC, SC-SM, SM	A-2, A-6, A-4	0	100	95-100	60-95	20-50	20-40	3-20
20--------------- Lynn Haven	0-12	Fine sand--------	SP, SP-SM	A-3, A-2-4	0	100	100	80-100	---	0-14	NP
	12-16	Sand, fine sand	SP, SP-SM, SM	A-3, A-2-4	0	100	100	80-100	2-14	0-14	NP
	16-30	Sand, fine sand, loamy sand.	SM, SP-SM	A-3, A-2-4	0	100	100	80-100	5-20	<20	NP
	30-75	Sand, fine sand	SP, SP-SM	A-3, A-2-4	0	100	100	80-100	2-12	0-14	NP
21--------------- Leefield	0-28	Loamy sand-------	SM, SW-SM, SP-SM	A-2	0	98-100	95-100	65-95	10-20	<20	NP
	28-51	Sandy loam, sandy clay loam.	SC, SM, SC-SM	A-2, A-4, A-6	0	95-100	93-100	65-95	20-40	<40	NP-16
	51-80	Sandy loam, sandy clay loam.	SC, SM, SC-SM	A-2, A-4, A-6	0	95-100	95-100	65-90	20-40	<40	NP-20
22--------------- Leon	0-3	Fine sand--------	SP, SP-SM	A-3, A-2-4	0	100	100	80-100	2-12	0-14	NP
	3-15	Sand, fine sand	SP, SP-SM	A-3, A-2-4	0	100	100	80-100	2-12	0-14	NP
	15-30	Sand, fine sand, loamy sand.	SM, SP-SM, SP	A-3, A-2-4	0	100	100	80-100	3-20	0-14	NP
	30-66	Sand, fine sand	SP, SP-SM	A-3, A-2-4	0	100	100	80-100	2-12	0-14	NP
	66-80	-----------------	SP, SP-SM	A-3, A-2-4	0	100	100	80-100	3-20	0-14	NP
23--------------- Maurepas	0-72	Muck-------------	PT	A-8	0	---	---	---	---	---	---
24--------------- Mandarin	0-13	Fine sand--------	SP, SP-SM	A-3	0	100	100	90-100	2-10	0-14	NP
	13-17	Fine sand, sand, loamy fine sand.	SP-SM, SM	A-3, A-2-4	0	100	100	90-100	5-15	<20	NP
	17-80	Fine sand, sand	SP, SP-SM	A-3	0	100	100	90-100	2-7	0-14	NP
25--------------- Meggett	0-8	Fine sandy loam	SM, ML	A-2, A-4	0	100	95-100	50-85	15-55	20-35	NP
	8-16	Clay, sandy clay, clay loam.	CH, MH, CL	A-6, A-7	0	100	90-100	75-100	51-90	30-60	11-30
	16-52	Clay, sandy clay, clay loam.	CH, MH, CL, ML	A-6, A-7	0	100	90-100	75-100	51-90	35-65	11-30
	52-65	Sandy clay, sandy clay loam, clay.	SC, SM, ML, MH	A-4, A-6, A-7	0	90-100	65-100	50-100	36-90	30-60	7-25

Table 12.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Frag-ments 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas-ticity index
	In				Pct					Pct	
26--------------- Ocilla	0-28	Loamy fine sand	SM, SP-SM	A-2, A-3	0	100	95-100	75-100	8-35	<20	NP
	28-59	Sandy loam, sandy clay loam, fine sandy loam.	SM, CL, SC, ML	A-2, A-4, A-6	0	100	95-100	80-100	20-55	20-40	NP-18
	59-67	Sandy clay loam, sandy clay, clay loam.	SC, CL	A-4, A-6, A-7	0	100	95-100	80-100	36-60	20-45	7-20
27--------------- Pelham	0-31	Loamy fine sand	SM	A-2	0	100	95-100	75-100	15-30	<20	NP
	31-52	Sandy clay loam, sandy loam, fine sandy loam.	SM, SC, SC-SM	A-2, A-4, A-6	0	100	95-100	65-100	27-50	15-30	2-12
	52-80	Sandy clay loam, sandy loam, sandy clay.	SC, SM, ML, CL	A-2, A-4, A-6, A-7	0	100	95-100	65-100	27-65	20-45	3-20
28--------------- Plummer	0-42	Fine sand--------	SM, SP-SM	A-2-4, A-3	0	100	100	75-90	5-20	0-14	NP
	42-80	Sandy loam, sandy clay loam, fine sandy loam.	SM, SC, SC-SM	A-2-4, A-4	0	100	97-100	76-96	20-48	<30	NP-10
30:											
Pantego---------	0-18	Fine sandy loam	SM, ML	A-2, A-4	0	100	95-100	65-100	25-75	20-35	NP-10
	18-44	Sandy loam, sandy clay loam, clay loam.	SC, SM, CL, ML	A-2, A-4, A-6	0	100	95-100	65-100	30-80	20-40	4-16
	44-80	Sandy clay, sandy clay loam, clay loam.	SC, CL, CL-ML, SC-SM	A-6, A-7	0	100	95-100	80-100	36-80	25-49	11-24
Bayboro---------	0-14	Loam-------------	CL, ML, CL-ML	A-6, A-7, A-4	0	100	100	85-100	60-80	25-42	3-20
	14-80	Clay loam, sandy clay, clay.	CL, CH	A-7, A-6	0	100	100	85-100	55-95	40-70	20-40
31:											
Pickney---------	0-51	Fine sand--------	SM, SP-SM	A-2, A-3	0	100	100	50-80	5-25	0-14	NP
	51-80	Loamy fine sand, loamy sand, fine sand.	SP, SP-SM, SM	A-2, A-3	0	100	100	50-90	3-25	<20	NP
Pamlico---------	0-22	Muck-------------	PT	---	0	---	---	---	---	---	---
	22-80	Sand, fine sand, loamy sand.	SM, SP-SM	A-2, A-3	0	100	100	70-95	5-20	10-20	NP
32--------------- Rains	0-36	Fine sandy loam	SM, ML	A-2, A-4	0	100	95-100	50-85	25-56	<35	NP-10
	36-60	Fine sandy loam, sandy clay loam, sandy loam.	SC, SC-SM, CL, CL-ML	A-2, A-4, A-6	0	100	95-100	55-98	30-70	18-40	4-20
	60-80	Sandy clay loam, clay loam, sandy clay.	SC, SC-SM, CL, CL-ML	A-4, A-6, A-7	0	100	98-100	60-98	36-72	18-45	4-28
33--------------- Resota	0-80	Fine sand--------	SP, SM, SP-SM	A-3, A-2-4	0	100	100	85-99	1-15	0-14	NP

Table 12.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Frag- ments 3-10 inches	Percentage passing sieve number-- 4	10	40	200	Liquid limit	Plas- ticity index
	In				Pct					Pct	
34:											
Pickney---------	0-51	Fine sand--------	SM, SP-SM	A-2, A-3	0	100	100	50-80	5-25	0-14	NP
	51-80	Loamy fine sand, loamy sand, fine sand.	SP, SP-SM, SM	A-2, A-3	0	100	100	50-90	3-25	10-20	NP
Rutlege---------	0-19	Fine sand--------	SP-SM	A-3	0	95-100	95-100	70-100	5-10	0-14	NP
	19-80	Sand, loamy sand, loamy fine sand.	SP-SM, SP, SM	A-2, A-3	0	95-100	95-100	50-80	2-25	<20	NP
35--------------- Stilson	0-25	Loamy sand-------	SM	A-2	0	94-100	94-100	74-92	15-24	<20	NP
	25-32	Sandy loam, sandy clay loam.	SM, SC, SC-SM	A-2, A-6, A-4	0	89-100	86-100	77-94	25-41	<29	NP-13
	32-80	Sandy loam, sandy clay loam.	SM, SC, SC-SM	A-2, A-6, A-4	0	96-100	95-100	70-99	25-50	<40	NP-20
36--------------- Sapelo	0-12	Sand-------------	SM, SP, SP-SM	A-2, A-3	0	100	100	85-100	4-20	0-14	NP
	12-17	Fine sand, sand, loamy fine sand.	SM, SP-SM	A-2, A-3	0	100	100	80-100	8-20	10-20	NP
	17-47	Fine sand, sand	SM, SP, SP-SM	A-2, A-3	0	100	100	75-100	4-20	10-20	NP
	47-80	Sandy loam, sandy clay loam, fine sandy loam.	SM, SC, SC-SM	A-2, A-4, A-6	0	100	100	80-100	20-50	<40	NP-20
37--------------- Scranton	0-9	Fine sand--------	SP-SM, SM	A-2, A-3, A-1	0	100	95-100	40-90	5-20	0-14	NP
	9-80	Sand, fine sand	SP-SM, SM, SP	A-2, A-3, A-1	0	100	95-100	40-90	1-15	10-20	NP
38--------------- Meadowbrook	0-7	Fine sand--------	SP, SP-SM	A-3	0	100	95-100	70-95	2-10	0-14	NP
	7-42	Sand, fine sand	SP, SP-SM	A-3	0	100	95-100	70-95	2-10	0-14	NP
	42-70	Loamy sand, sandy loam, fine sandy loam.	SM, SC-SM	A-2-4	0	100	95-100	70-99	15-30	<25	NP-7
	70-80	Sandy loam, fine sandy loam, sandy clay loam.	SM, SC-SM, SC	A-2-4, A-2-6	0	100	95-100	70-99	13-35	<35	NP-20
39--------------- Surrency	0-18	Mucky fine sand	SP-SM, SM, SC-SM	A-3, A-2-4	0	100	95-100	50-100	5-20	0-20	NP-5
	18-34	Loamy sand, sand, fine sand.	SP-SM, SM	A-2-4	0	100	95-100	50-100	10-26	0-14	NP
	34-80	Sandy loam, sandy clay loam.	SM, SC-SM, SC	A-2	0	100	95-100	75-100	22-35	0-30	NP-10
40--------------- Brickyard	0-4	Silty clay-------	CL, CH, MH	A-7	0	100	98-100	95-100	80-100	41-70	15-40
	4-80	Silty clay, silty clay loam, clay.	CL, CH, MH	A-7	0	100	98-100	95-100	85-100	41-75	15-45
41:											
Brickyard-------	0-5	Silty clay-------	CL, CH, MH	A-7	0	100	98-100	95-100	80-100	41-70	15-40
	5-34	Silty clay, silty clay loam, clay.	CL, CH, MH	A-7	0	100	98-100	95-100	85-100	41-75	15-45
	34-80	Silty clay, silty clay loam, clay loam.	CL, CH, MH, OH	A-6, A-7	0	100	98-100	90-100	70-95	30-70	11-40

Table 12.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag- ments	Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	3-10 inches	4	10	40	200		
	In				Pct					Pct	
41:											
Chowan	0-8	Silt loam	CL-ML, ML, MH	A-7-5, A-4, A-6	0	100	100	90-100	85-95	22-60	4-24
	8-38	Loam, silt loam, silty clay loam.	CL, MH, ML	A-7-5, A-4, A-6	0	100	100	90-100	85-96	22-62	6-30
	38-80	Sapric material	PT	---	---	---	---	---	---	---	---
Kenner	0-38	Muck	PT	A-8	0	---	---	---	---	---	---
	38-42	Clay, silty clay, mucky clay.	MH, OH	A-7-5	0	100	100	100	95-100	70-100	30-55
	42-46	Muck	PT	A-8	0	---	---	---	---	---	---
	46-65	Clay, silty clay, mucky clay.	MH, OH	A-7-5	0	100	100	100	95-100	70-100	30-55
	65-80	Muck	PT	A-8	0	---	---	---	---	---	---
42 Pottsburg	0-6	Fine sand	SP, SP-SM	A-3	0	100	100	80-100	2-10	0-14	NP
	6-53	Sand, fine sand	SP, SP-SM	A-3	0	100	100	80-100	1-8	0-14	NP
	53-67	Sand, fine sand, loamy sand.	SP-SM, SP-SM, SP, SM	A-3, A-2-4	0	100	100	80-100	4-18	0-14	NP
44:											
Pamlico	0-22	Muck	PT	---	0	---	---	---	---	---	---
	22-80	Loamy sand, sand, loamy fine sand.	SM, SP-SM	A-2, A-3	0	100	100	70-95	5-20	10-20	NP
Pickney	0-51	Fine sand	SP-SM, SM	A-2	0	100	100	50-90	10-25	0-14	NP
	51-80	Loamy fine sand, loamy sand, fine sand.	SP, SP-SM, SM	A-2, A-3	0	100	100	50-90	3-25	10-20	NP
45:											
Croatan	0-35	Muck	PT	---	0	---	---	---	---	---	---
	35-60	Sandy loam, fine sandy loam, mucky sandy loam.	SM, SC, SC-SM	A-2, A-4	0	100	100	60-85	25-49	25-35	NP-10
	60-80	Loam, clay loam, sandy clay loam.	CL, SM, ML, SC	A-4, A-6	0	100	100	75-100	36-95	18-45	NP-15
Surrency	0-18	Mucky fine sand	SP-SM, SM, SC-SM	A-3, A-2-4	0	100	95-100	50-100	5-20	0-20	NP-5
	18-34	Loamy sand, sand, fine sand.	SP-SM, SM	A-2-4	0	100	95-100	50-100	10-26	0-14	NP
	34-80	Sandy loam, sandy clay loam.	SM, SC-SM, SC	A-2	0	100	95-100	75-100	22-35	0-30	NP-10
46:											
Corolla	0-80	Fine sand	SW, SP-SM, SP	A-2, A-3	0	80-100	75-100	60-95	1-12	0-14	NP
Duckston	0-8	Sand	SP-SM, SP	A-2, A-3	0	100	95-100	60-75	3-12	10-15	NP
	8-80	Sand, fine sand	SP-SM, SP	A-2, A-3	0	100	95-100	60-75	3-12	10-15	NP
47:											
Newhan	0-80	Fine sand	SP, SP-SM	A-3	0	95-100	95-100	60-75	0-5	10-14	NP
Corolla	0-80	Fine sand	SW, SP-SM, SP	A-2, A-3	0	80-100	75-100	60-95	1-12	0-14	NP

Table 12.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments 3-10 inches	Percentage passing sieve number-- 4	10	40	200	Liquid limit	Plasticity index
	In				Pct					Pct	
48:											
Kureb	0-80	Fine sand	SP, SP-SM	A-3	0	100	100	60-100	0-7	10-14	NP
Corolla	0-80	Fine sand	SW, SP-SM, SP	A-2, A-3	0	80-100	75-100	60-95	1-12	0-14	NP
49 Quartzipsamments	0-80	Fine sand	SP, SP-SM	A-3, A-2-4	0	100	98-100	50-80	1-7	0-14	NP
50:											
Wahee	0-5	Loam	CL, CL-ML	A-4, A-6	0	100	100	90-100	70-90	24-30	5-11
	5-60	Silty clay loam, silty clay, clay.	CL, CH	A-6, A-7	0	100	100	90-100	51-98	30-65	11-33
	60-80	Variable	---	---	---	---	---	---	---	---	---
Mantachie	0-11	Fine sandy loam	CL-ML, SC-SM, SM, ML	A-4	0-5	95-100	90-100	60-85	40-60	<20	NP-5
	11-61	Loam, clay loam, sandy clay loam.	CL, SC, SC-SM, CL-ML	A-4, A-6	0-5	95-100	90-100	80-95	45-80	20-40	5-15
Ochlockonee	0-6	Sandy loam	SM, ML, SC-SM, CL-ML	A-4, A-2	0	100	95-100	65-90	40-70	<26	NP-5
	6-44	Fine sandy loam, sandy loam, silt loam.	SM, ML, SC, CL	A-4	0	100	95-100	95-100	36-75	<32	NP-9
	44-72	Loamy sand, sandy loam, silt loam.	SM, ML, CL, SC	A-4, A-2	0	100	95-100	85-99	13-80	<32	NP-9
51:											
Kenansville	0-23	Loamy fine sand	SM, SP-SM	A-1, A-2	0	100	95-100	45-99	10-25	0-14	NP
	23-80	Sandy loam, fine sandy loam, sandy clay loam.	SM, SC, SC-SM	A-2, A-4	0	100	95-100	50-99	25-45	0-30	NP-10
Eulonia	0-11	Fine sandy loam	SM, SC-SM	A-2, A-4, A-5	0	100	95-100	60-98	30-50	25-62	NP-10
	11-55	Sandy clay, clay, clay loam.	SC, CL	A-6, A-7, A-4	0	100	95-100	70-99	45-80	25-45	8-37
	55-66	Sandy clay loam, sandy loam.	SC, SM, SC-SM	A-2, A-4, A-6	0	100	90-100	60-100	18-50	15-35	3-15
	66-80	Variable	---	---	---	---	---	---	---	---	---
52 Dothan	0-16	Loamy sand	SM	A-2	0	95-100	92-100	60-80	13-30	0-14	NP
	16-33	Sandy clay loam, sandy loam, fine sandy loam.	SC-SM, SC, SM	A-2, A-4, A-6	0	95-100	92-100	60-90	23-49	<40	NP-16
	33-80	Sandy clay loam, sandy clay.	SC-SM, SC, CL-ML, CL	A-2, A-4, A-6, A-7	0	95-100	92-100	70-95	30-53	25-45	4-23

Table 13.--Physical and Chemical Properties of the Soils

(Entries under "Erosion factors--T" apply to the entire profile. Entries under "Wind erodibility group" and "Organic matter" apply only to the surface layer. Absence of an entry indicates that data were not available or were not estimated.)

Soil name and map symbol	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Soil reaction	Salinity	Shrink- swell potential	Erosion factors K	Erosion factors T	Wind erodi- bility group	Organic matter
	In	Pct	g/cc	In/hr	In/in	pH	mmhos/cm					Pct
2---------------- Albany	0-41	1-10	1.40-1.55	6.0-20	0.02-0.04	3.6-6.5	<2	Low-------	0.10	5	1	1-2
	41-80	13-35	1.55-1.65	0.2-2.0	0.10-0.16	4.5-6.0	<2	Low-------	0.24			
3---------------- Alapaha	0-22	4-10	1.45-1.60	6.0-20	0.05-0.08	4.5-5.5	<2	Low-------	0.10	5	2	1-2
	22-64	15-30	1.55-1.65	0.6-2.0	0.10-0.13	4.5-5.5	<2	Low-------	0.24			
	64-80	20-30	1.60-1.70	0.2-0.6	0.08-0.10	4.5-5.5	<2	Low-------	0.28			
4---------------- Aquents	0-80	0-5	1.30-1.65	6.0-20	0.02-0.05	3.6-6.0	<2	Low-------	0.10	5	2	1-5
5---------------- Bladen	0-12	10-20	1.35-1.45	0.6-2.0	0.10-0.13	3.6-5.5	<2	Low-------	0.24	5	3	1-3
	12-43	35-55	1.60-1.70	0.06-0.2	0.12-0.16	3.6-5.5	<2	Moderate	----			
	43-72	35-70	1.60-1.70	0.06-0.2	0.12-0.16	3.6-5.5	<2	Moderate	----			
	72-80	---	---	---	---	---	<2	----------	----			
6---------------- Blanton	0-60	1-7	1.30-1.60	6.0-20	0.03-0.07	4.5-6.0	<2	Low-------	0.10	5	1	.5-1
	60-72	10-18	1.50-1.65	2.0-6.0	0.10-0.15	4.5-5.5	<2	Low-------	0.15			
	72-80	12-40	1.60-1.70	0.2-2.0	0.10-0.15	4.5-5.5	<2	Low-------	0.20			
7:												
Bayvi-----------	0-26	3-9	1.50-1.60	2.0-6.0	0.01-0.03	6.1-8.4	>4	Low-------	0.10	5	2	1-8
	26-80	3-9	1.50-1.60	6.0-20	0.01-0.03	6.1-8.4	4-16	Low-------	0.10			
Dirego----------	0-19	---	0.10-0.35	6.0-20	0.01-0.03	6.1-7.3	>16	Low-------	----	2	2	25-60
	19-80	2-12	1.50-1.60	6.0-20	0.01-0.03	5.6-6.5	2-16	Low-------	----			
8---------------- Beaches	0-80	0-1	1.35-1.85	6.0-20	0.03-0.05	5.1-7.8	4-32	Low-------	0.05	5	1	0-.1
9---------------- Ridgewood	0-5	1-3	1.35-1.55	6.0-20	0.05-0.10	4.5-7.3	<2	Low-------	0.10	5	1	<1
	5-80	0-5	1.35-1.65	6.0-20	0.03-0.08	4.5-7.3	<2	Low-------	0.10			
10--------------- Corolla	0-80	0-3	1.60-1.70	>20	0.01-0.03	5.6-7.8	0-0	Low-------	0.10	5	1	0-.5
11--------------- Clarendon	0-10	2-10	1.40-1.60	2.0-6.0	0.08-0.12	4.5-6.5	<2	Low-------	0.15	5	2	.5-3
	10-62	18-35	1.40-1.60	0.6-2.0	0.10-0.15	4.5-5.5	<2	Low-------	0.20			
	62-80	15-40	1.40-1.70	0.2-0.6	0.08-0.12	4.5-5.5	<2	Low-------	0.15			
12:												
Dothan----------	0-16	5-15	1.30-1.60	2.0-6.0	0.06-0.10	4.5-6.0	<2	Low-------	0.15	5	2	<.5
	16-33	18-35	1.40-1.60	0.6-2.0	0.12-0.16	4.5-6.0	<2	Low-------	0.28			
	33-80	18-40	1.45-1.70	0.2-0.6	0.08-0.12	4.5-6.0	<2	Low-------	0.28			
Fuquay----------	0-21	2-10	1.60-1.70	>6.0	0.04-0.09	4.5-6.0	<2	Low-------	0.15	5	2	.5-2
	21-42	10-35	1.40-1.60	0.6-2.0	0.12-0.15	4.5-6.0	<2	Low-------	0.20			
	42-80	20-35	1.40-1.60	0.06-0.2	0.10-0.13	4.5-6.0	<2	Low-------	0.20			
13:												
Dorovan---------	0-54	---	0.35-0.55	0.6-2.0	0.20-0.25	3.6-4.4	<2	----------	----	3	2	25-80
	54-80	5-20	1.40-1.65	6.0-20	0.05-0.08	4.5-5.5	<2	Low-------	----			

Table 13.--Physical and Chemical Properties of the Soils--Continued

Soil name and map symbol	Depth	Clay	Moist bulk density	Permea-bility	Available water capacity	Soil reaction	Salinity	Shrink-swell potential	Erosion factors K	Erosion factors T	Wind erodi-bility group	Organic matter
	In	Pct	g/cc	In/hr	In/in	pH	mmhos/cm					Pct
13:												
Croatan	0-42	---	0.40-0.65	0.06-6.0	0.35-0.45	<4.5	<2	Low	----	2	2	25-60
	42-46	8-20	1.40-1.60	0.2-6.0	0.10-0.15	3.5-6.5	<2	Low	0.17			
	46-65	10-35	1.40-1.60	0.2-2.0	0.12-0.20	3.5-6.5	<2	Low	0.24			
	65-80	---	---	---	---	---	---	----------	----			
14:												
Duckston	0-8	0-4	1.60-1.70	>20	0.02-0.08	3.5-8.4	8-16	Low	0.10	5	1	.5-3
	8-80	0-4	1.60-1.70	>20	0.02-0.05	3.5-8.4	4-8	Low	0.10			
Duckston, depressional	0-8	0-4	1.15-1.30	6.0-20	0.10-0.20	3.5-8.4	8-16	Low	0.10	5	8	8-15
	8-80	0-4	1.60-1.70	>20	0.02-0.05	3.5-8.4	4-8	Low	0.10			
15 Wahee	0-12	5-20	1.30-1.60	0.6-2.0	0.10-0.15	4.5-6.0	<2	Low	0.24	5	3	.5-5
	12-72	35-70	1.40-1.60	0.06-0.2	0.12-0.20	3.6-5.5	<2	Moderate	0.28			
	72-80	---	---	---	---	---	<2	----------	----			
16 Ortega	0-7	1-3	1.20-1.45	6.0-20	0.05-0.08	3.6-6.5	<2	Low	0.10	5	2	1-2
	7-80	1-3	1.35-1.60	6.0-20	0.03-0.06	3.6-6.5	<2	Low	0.10			
17 Fuquay	0-21	2-10	1.60-1.70	>6.0	0.04-0.09	4.5-6.0	<2	Low	0.15	5	2	.5-2
	21-42	10-35	1.40-1.60	0.6-2.0	0.12-0.15	4.5-6.0	<2	Low	0.20			
	42-80	20-35	1.40-1.60	0.06-0.2	0.10-0.13	4.5-6.0	<2	Low	0.20			
19 Lucy	0-30	1-12	1.30-1.70	6.0-20	0.08-0.12	5.1-6.0	<2	Low	0.10	5	2	.5-1
	30-37	10-30	1.40-1.60	2.0-6.0	0.10-0.12	4.5-5.5	<2	Low	0.24			
	37-80	20-45	1.40-1.60	0.6-2.0	0.12-0.14	4.5-5.5	<2	Low	0.28			
20 Lynn Haven	0-12	1-6	1.30-1.45	6.0-20	0.05-0.15	3.6-5.5	<2	Low	0.10	5	1	1-4
	12-16	0-3	1.30-1.60	6.0-20	0.05-0.10	3.6-5.5	<2	Low	0.10			
	16-30	2-8	1.40-1.55	0.6-6.0	0.15-0.30	3.6-5.5	<2	Low	0.15			
	30-75	1-4	1.50-1.65	2.0-20	0.01-0.05	3.6-5.5	<2	Low	0.10			
21 Leefield	0-28	3-10	1.45-1.60	6.0-20	0.04-0.07	4.5-6.0	<2	Low	0.10	5	1	1-2
	28-51	15-25	1.50-1.65	0.6-2.0	0.10-0.13	4.5-5.5	<2	Low	0.15			
	51-80	15-30	1.50-1.70	0.2-0.6	0.08-0.12	4.5-5.5	<2	Low	0.10			
22 Leon	0-3	1-5	1.30-1.45	6.0-20	0.05-0.15	3.5-6.5	0-2	Low	0.10	5	1	.5-4
	3-15	0-3	1.40-1.60	6.0-20	0.02-0.05	3.5-6.5	0-2	Low	0.10			
	15-30	2-8	1.25-1.65	0.6-6.0	0.15-0.30	3.5-6.5	0-2	Low	0.15			
	30-66	1-4	1.50-1.65	2.0-20	0.05-0.10	3.5-6.5	0-2	Low	0.10			
	66-80	2-8	1.25-1.65	0.2-2.0	0.15-0.30	3.5-6.5	0-2	Low	0.15			
23 Maurepas	0-72	---	0.05-0.25	6.0-20.0	0.20-0.50	5.6-8.4	<4	Low	----	3	---	---
24 Mandarin	0-13	0-3	1.35-1.45	6.0-20	0.03-0.07	3.6-6.0	<2	Low	0.10	5	2	<3
	13-17	2-9	1.45-1.60	0.6-2.0	0.10-0.15	3.6-6.0	<2	Low	0.15			
	17-80	0-3	1.35-1.45	6.0-20	0.03-0.07	3.6-7.3	<2	Low	0.10			
25 Meggett	0-8	5-20	1.20-1.40	2.0-6.0	0.10-0.15	4.5-6.5	<2	Low	0.24	5	3	2-8
	8-16	30-60	1.45-1.60	0.06-0.2	0.13-0.18	5.1-8.4	<2	High	0.32			
	16-52	35-60	1.50-1.75	0.06-0.2	0.13-0.18	6.1-8.4	<2	High	0.32			
	52-65	25-50	1.40-1.60	0.06-0.6	0.12-0.18	6.1-8.4	<2	Moderate	0.28			
26 Ocilla	0-28	4-10	1.45-1.65	2.0-20	0.05-0.08	4.5-5.5	<2	Low	0.10	5	2	1-2
	28-59	15-35	1.55-1.70	0.6-2.0	0.09-0.12	4.5-5.5	<2	Low	0.24			
	59-67	15-40	1.55-1.70	0.2-2.0	0.09-0.12	4.5-5.5	<2	Low	0.24			

Table 13.--Physical and Chemical Properties of the Soils--Continued

Soil name and map symbol	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Soil reaction	Salinity	Shrink- swell potential	Erosion factors K	Erosion factors T	Wind erodi- bility group	Organic matter
	In	Pct	g/cc	In/hr	In/in	pH	mmhos/cm					Pct
27--------------- Pelham	0-31	5-10	1.50-1.70	6.0-20	0.05-0.08	3.6-5.5	<2	Low-------	0.10	5	2	1-2
	31-52	15-30	1.30-1.60	0.6-2.0	0.10-0.13	3.6-5.5	<2	Low-------	0.24			
	52-80	15-40	1.30-1.60	0.2-2.0	0.10-0.16	3.6-5.5	<2	Low-------	0.24			
28--------------- Plummer	0-42	1-7	1.35-1.65	6.0-20	0.03-0.08	3.6-5.5	<2	Low-------	0.10	5	1	1-3
	42-80	15-30	1.50-1.70	0.2-2.0	0.07-0.15	3.6-5.5	<2	Low-------	0.15			
30:												
Pantego---------	0-18	5-15	1.40-1.60	2.0-6.0	0.12-0.20	3.5-5.5	<2	Low-------	0.20	5	8	4-10
	18-44	18-35	1.30-1.50	0.6-2.0	0.12-0.20	3.5-5.5	<2	Low-------	0.28			
	44-80	20-40	1.30-1.60	0.2-0.6	0.15-0.20	3.5-5.5	<2	Low-------	0.28			
Bayboro---------	0-14	10-35	1.30-1.50	0.6-2.0	0.15-0.20	3.5-5.5	<2	Low-------	0.17	5	6	4-10
	14-80	35-65	1.20-1.40	0.06-0.2	0.14-0.18	4.5-5.5	<2	Moderate	0.32			
31:												
Pickney---------	0-51	1-10	1.20-1.40	6.0-20	0.04-0.10	3.6-6.0	<2	Low-------	0.10	5	1	3-15
	51-80	1-10	1.40-1.60	6.0-20	0.03-0.11	3.6-6.0	<2	Low-------	0.10			
Pamlico---------	0-22	---	0.20-0.65	0.6-6.0	0.24-0.40	3.5-5.5	<2	Low-------	----	---	2	20-80
	22-80	5-10	1.60-1.75	6.0-20	0.02-0.10	3.5-5.5	<2	Low-------	0.10			
32--------------- Rains	0-36	5-20	1.30-1.60	2.0-6.0	0.10-0.14	3.6-6.5	<2	Low-------	0.20	5	3	1-6
	36-60	18-35	1.30-1.60	0.6-2.0	0.11-0.15	3.6-5.5	<2	Low-------	0.24			
	60-80	18-40	1.30-1.50	0.6-2.0	0.10-0.15	3.6-5.5	<2	Low-------	0.28			
33--------------- Resota	0-80	0-3	1.30-1.60	>20	0.02-0.05	3.6-6.5	<2	Low-------	0.10	5	1	<1
34:												
Pickney---------	0-51	1-10	1.20-1.40	6.0-20	0.04-0.10	3.6-6.0	<2	Low-------	0.10	5	1	3-15
	51-80	1-10	1.40-1.60	6.0-20	0.03-0.11	3.6-6.0	<2	Low-------	0.10			
Rutlege---------	0-19	2-10	1.30-1.50	6.0-20	0.04-0.06	3.6-5.5	<2	Low-------	0.10	5	---	3-9
	19-80	2-10	1.40-1.60	6.0-20	0.04-0.08	3.6-5.5	<2	Low-------	0.17			
35--------------- Stilson	0-25	3-8	1.35-1.60	6.0-20	0.06-0.09	4.5-5.5	<2	Low-------	0.10	5	1	.5-1
	25-32	15-30	1.40-1.60	0.6-2.0	0.09-0.12	4.5-5.5	<2	Low-------	0.24			
	32-80	15-35	1.40-1.60	0.6-2.0	0.08-0.10	4.5-5.5	<2	Low-------	0.17			
36--------------- Sapelo	0-12	2-5	1.40-1.65	6.0-20	0.03-0.07	3.6-5.5	<2	Low-------	0.10	5	1	1-3
	12-17	3-7	1.35-1.60	0.6-2.0	0.10-0.15	3.6-5.5	<2	Low-------	0.15			
	17-47	3-6	1.50-1.70	6.0-20	0.03-0.07	3.6-5.5	<2	Low-------	0.17			
	47-80	10-30	1.55-1.75	0.2-2.0	0.12-0.17	3.6-5.5	<2	Low-------	0.24			
37--------------- Scranton	0-9	2-8	1.30-1.60	6.0-20	0.05-0.10	4.5-6.5	<2	Low-------	0.10	5	1	1-4
	9-80	2-10	1.40-1.60	6.0-20	0.04-0.08	4.5-6.0	<2	Low-------	0.10			
38--------------- Meadowbrook	0-7	0-3	1.35-1.65	6.0-20	0.05-0.10	3.6-7.3	<2	Low-------	0.10	5	2	1-3
	7-42	1-6	1.35-1.65	6.0-20	0.03-0.08	3.6-8.4	<2	Low-------	0.10			
	42-70	9-20	1.50-1.80	0.2-2.0	0.10-0.15	4.5-8.4	<2	Low-------	0.15			
	70-80	11-22	1.50-1.80	0.2-2.0	0.10-0.15	4.5-8.4	<2	Low-------	0.15			
39--------------- Surrency	0-18	2-8	0.80-1.25	6.0-20	0.15-0.30	3.6-5.5	0-0	Low-------	0.10	5	8	10-20
	18-34	0-10	1.50-1.65	2.0-20	0.05-0.10	3.6-5.5	0-0	Low-------	0.10			
	34-80	10-23	1.60-1.85	0.6-6.0	0.06-0.10	3.6-5.5	0-0	Low-------	0.15			

Table 13.--Physical and Chemical Properties of the Soils--Continued

Soil name and map symbol	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Soil reaction	Salinity	Shrink- swell potential	Erosion factors K	Erosion factors T	Wind erodi- bility group	Organic matter
	In	Pct	g/cc	In/hr	In/in	pH	mmhos/cm					Pct
40---------------Brickyard	0-4	28-60	1.30-1.60	0.06-0.2	0.14-0.18	5.6-7.3	<2	High------	0.28	5	4	3-8
	4-80	35-60	1.30-1.60	<0.06	0.14-0.18	5.6-8.4	<2	Moderate	0.37			
41:												
Brickyard-------	0-5	28-60	1.30-1.60	0.06-0.2	0.14-0.18	5.6-7.3	<2	High------	0.28	5	4	3-8
	5-34	35-60	1.30-1.60	<0.06	0.14-0.18	5.6-8.4	<2	Moderate	0.37			
	34-80	28-60	0.95-1.60	0.06-0.2	0.12-0.18	5.6-8.4	<2	Moderate	0.32			
Chowan----------	0-8	5-25	1.20-1.40	2.0-6.0	0.15-0.20	3.5-6.0	<2	Low-------	0.32	4	5	2-4
	8-38	18-35	1.40-1.60	0.2-0.6	0.15-0.20	3.5-6.0	<2	Low-------	0.32			
	38-80	2-12	0.40-0.65	0.2-6.0	0.20-0.26	3.5-5.0	<2	Low-------	----			
Kenner----------	0-38	---	0.05-0.25	6.0-20	0.20-0.25	5.6-7.8	<4	Low-------	----	3	8	---
	38-42	45-85	0.15-1.00	<0.06	0.12-0.18	5.6-7.8	<4	Low-------	0.32			
	42-46	---	0.05-0.50	>6.0	0.20-0.25	5.6-7.8	<4	Low-------	----			
	46-65	45-85	0.15-1.00	<0.06	0.12-0.18	5.6-7.8	<4	Low-------	0.32			
	65-80	---	0.05-0.50	>6.0	0.20-0.25	5.6-7.8	<4	Low-------	----			
42---------------Pottsburg	0-6	1-4	1.15-1.40	6.0-20	0.05-0.15	3.6-6.5	<2	Low-------	0.10	5	1	.5-3
	6-53	0-4	1.40-1.70	6.0-20	0.03-0.10	3.6-6.5	<2	Low-------	0.10			
	53-67	1-6	1.55-1.70	0.6-2.0	0.10-0.25	3.6-6.0	<2	Low-------	0.15			
44:												
Pamlico---------	0-22	---	0.20-0.65	0.6-6.0	0.24-0.40	3.5-5.5	<2	Low-------	----	2	2	20-80
	22-80	5-10	1.60-1.75	6.0-20	0.10-0.20	3.5-5.5	<2	Low-------	0.10			
Pickney---------	0-51	2-10	1.20-1.40	6.0-20	0.04-0.08	3.6-5.5	<2	Low-------	0.10	5	2	3-15
	51-80	1-10	1.40-1.60	6.0-20	0.03-0.11	3.6-6.0	<2	Low-------	0.10			
45:												
Croatan---------	0-35	---	0.40-0.65	0.06-6.0	0.35-0.45	<4.5	<2	Low-------	----	2	2	25-60
	35-60	8-20	1.40-1.60	0.2-6.0	0.10-0.15	3.5-6.5	<2	Low-------	0.17			
	60-80	10-35	1.40-1.60	0.2-2.0	0.12-0.20	3.5-6.5	<2	Low-------	0.24			
Surrency--------	0-18	2-8	0.80-1.25	6.0-20	0.15-0.30	3.6-5.0	0-0	Low-------	0.10	5	8	10-20
	18-34	0-10	1.50-1.65	2.0-20	0.05-0.10	3.6-5.0	0-0	Low-------	0.10			
	34-80	10-23	1.60-1.85	0.6-6.0	0.06-0.10	3.6-5.5	0-0	Low-------	0.15			
46:												
Corolla---------	0-80	0-3	1.60-1.70	>20	0.01-0.03	5.6-7.8	0-0	Low-------	0.10	5	1	0-.5
Duckston--------	0-8	0-4	1.60-1.70	>20	0.02-0.08	3.5-8.4	8-16	Low-------	0.10	5	1	.5-3
	8-80	0-4	1.60-1.70	>20	0.02-0.05	3.5-8.4	4-8	Low-------	0.10			
47:												
Newhan----------	0-80	0-0	1.60-1.75	>20	<0.05	3.5-7.8	4-16	Low-------	0.10	5	1	0-.5
Corolla---------	0-80	0-3	1.60-1.70	>20	0.01-0.03	5.6-7.8	0-0	Low-------	0.10	5	1	0-.5
48:												
Kureb-----------	0-80	0-3	1.60-1.80	6.0-20	<0.05	3.5-7.3	<2	Low-------	0.10	5	1	0-2
Corolla---------	0-80	0-3	1.60-1.70	>20	0.01-0.03	5.6-7.8	0-0	Low-------	0.10	5	1	0-.5
49---------------Quartzipsamments	0-80	1-2	1.50-1.65	>20	0.02-0.05	4.5-6.0	<2	Low-------	0.10	5	1	0-1

Table 13.--Physical and Chemical Properties of the Soils--Continued

Soil name and map symbol	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Soil reaction	Salinity	Shrink- swell potential	Erosion factors K	Erosion factors T	Wind erodi- bility group	Organic matter
	In	Pct	g/cc	In/hr	In/in	pH	mmhos/cm					Pct
50:												
Wahee-----------	0-5	10-25	1.20-1.40	0.06-0.6	0.12-0.18	4.5-6.5	<2	Low-------	0.37	5	6	1-5
	5-60	35-70	1.30-1.60	0.06-0.2	0.12-0.16	4.5-6.5	<2	Moderate	0.37			
	60-80	---	---	---	---	---	---	----------	----			
Mantachie-------	0-11	8-20	1.50-1.60	0.6-2.0	0.16-0.20	4.5-5.5	<2	Low-------	0.28	5	---	1-3
	11-61	18-34	1.50-1.60	0.6-2.0	0.14-0.20	4.5-5.5	<2	Low-------	0.28			
Ochlockonee-----	0-6	3-18	1.40-1.60	2.0-6.0	0.07-0.14	4.5-6.5	<2	Low-------	0.20	5	3	.5-2
	6-44	8-18	1.40-1.60	0.6-2.0	0.10-0.20	4.5-5.5	<2	Low-------	0.20			
	44-72	3-18	1.40-1.70	2.0-6.0	0.06-0.12	4.5-5.5	<2	Low-------	0.17			
51:												
Kenansville-----	0-23	3-10	1.50-1.70	6.0-20	0.04-0.10	4.5-6.0	0-0	Low-------	0.15	5	2	.5-2
	23-80	5-18	1.30-1.50	0.6-6.0	0.10-0.16	4.5-6.0	0-0	Low-------	0.15			
Eulonia---------	0-11	5-20	1.30-1.50	2.0-6.0	0.08-0.12	4.5-6.5	<2	Low-------	0.24	5	3	.5-2
	11-55	35-45	1.40-1.60	0.2-0.6	0.12-0.16	4.5-6.5	<2	Low-------	0.24			
	55-66	15-35	1.40-1.60	0.6-2.0	0.10-0.14	4.5-6.0	<2	Low-------	0.20			
	66-80	---	---	---	---	---	---	----------	----			
52--------------- Dothan	0-16	5-15	1.30-1.60	2.0-6.0	0.06-0.10	4.5-6.0	<2	Low-------	0.15	5	2	<.5
	16-33	18-35	1.40-1.60	0.6-2.0	0.12-0.16	4.5-6.0	<2	Low-------	0.28			
	33-80	18-40	1.45-1.70	0.2-0.6	0.08-0.12	4.5-6.0	<2	Low-------	0.28			

Table 14.--Soil and Water Features

("Flooding" and "water table" and terms such as "rare," "brief," "apparent," and "perched" are explained in the text. Absence of an entry indicates that the feature is not a concern or that data were not estimated.)

Soil name and map symbol	Hydro-logic group	Flooding: Frequency	Flooding: Duration	Flooding: Months	High water table: Depth	High water table: Kind	High water table: Months	Depth to bedrock	Subsidence: Ini-tial	Subsidence: Total	Risk of corrosion: Uncoated steel	Risk of corrosion: Concrete
					Ft			In	In	In		
2------------- Albany	C	None------	---	---	1.0-2.5	Apparent	Dec-Mar	>60	---	---	High-----	High.
3------------- Alapaha	D	None------	---	---	0-1.0	Apparent	Dec-May	>60	---	---	High-----	High.
4------------- Aquents	D	None------	---	---	0-1.0	Apparent	Jun-Nov	>60	---	---	High-----	Moderate.
5------------- Bladen	D	None------	---	---	0-1.0	Apparent	Dec-May	>60	---	---	High-----	High.
6------------- Blanton	A	None------	---	---	4.0-6.0	Perched	Mar-Aug	>60	---	---	High-----	High.
7:												
Bayvi--------	D	Frequent--	Very long	Jan-Dec	0-1.0	Apparent	Jan-Dec	>60	---	---	High-----	High.
Dirego-------	D	Frequent--	Very long	Jan-Dec	0-1.0	Apparent	Jan-Dec	>60	16-20	16-40	High-----	High.
8------------- Beaches	D	Frequent--	Very brief	Jan-Dec	0-6.0	Apparent	Jan-Dec	>60	---	---	High-----	High.
9------------- Ridgewood	C	None------	---	---	2.0-3.5	Apparent	Jun-Nov	>60	---	---	Low------	High.
10------------ Corolla	D	Rare------	---	---	1.5-3.0	Apparent	Nov-May	>60	---	---	Low------	Low.
11------------ Clarendon	C	None------	---	---	2.0-3.0	Apparent	Dec-Mar	>60	---	---	Moderate	High.
12:												
Dothan-------	B	None------	---	---	3.0-5.0	Perched	Jan-Apr	>60	---	---	Moderate	Moderate.
Fuquay-------	B	None------	---	---	4.0-6.0	Perched	Jan-Mar	>60	---	---	Low------	High.
13:												
Dorovan------	D	None------	---	---	+1-0.5	Apparent	Jan-Dec	>60	6-12	51-80	High-----	High.
Croatan------	D	Rare------	---	---	0-1.0	Apparent	Nov-May	>60	4-10	18-24	High-----	High.
14:												
Duckston-----	D	Frequent--	Brief-----	Jan-Dec	0-0.5	Apparent	Jan-Dec	>60	---	---	Low------	Low.
Ducksston, depressional	D	Frequent--	Brief-----	Jan-Dec	+1-0	Apparent	Jan-Dec	>60	---	---	Moderate	Moderate.
15------------ Wahee	D	None------	---	---	0.5-1.5	Apparent	Dec-Mar	>60	---	---	High-----	High.
16------------ Ortega	A	None------	---	---	3.5-5.0	Apparent	Jun-Jan	>60	---	---	Low------	High.

Table 14.--Soil and Water Features--Continued

Soil name and map symbol	Hydro-logic group	Flooding: Frequency	Flooding: Duration	Flooding: Months	High water table: Depth	High water table: Kind	High water table: Months	Depth to bedrock	Subsidence: Ini-tial	Subsidence: Total	Risk of corrosion: Uncoated steel	Risk of corrosion: Concrete
					Ft			In	In	In		
17----------- Fuquay	B	None------	---	---	4.0-6.0	Perched	Jan-Mar	>60	---	---	Low------	High.
19----------- Lucy	A	None------	---	---	>6.0	---	---	>60	---	---	Low------	High.
20----------- Lynn Haven	D	None------	---	---	0-0.5	Apparent	Feb-Sep	>60	---	---	High-----	High.
21----------- Leefield	C	None------	---	---	1.5-2.5	Apparent	Dec-Mar	>60	---	---	Moderate	High.
22----------- Leon	D	None------	---	---	0.5-1.5	Apparent	Mar-Sep	>60	---	---	High-----	High.
23----------- Maurepas	D	Frequent--	Brief-----	Jan-Dec	+1-0.5	Apparent	Jan-Dec	>60	15-30	>51	High-----	High.
24----------- Mandarin	C	None------	---	---	1.5-3.5	Apparent	Jun-Dec	>60	---	---	Moderate	High.
25----------- Meggett	D	Occasional	Brief-----	Dec-Apr	0-1.0	Apparent	Nov-Apr	>60	---	---	High-----	Moderate.
26----------- Ocilla	C	Occasional	Brief-----	Dec-Apr	1.0-2.5	Apparent	Dec-Apr	>60	---	---	High-----	Moderate.
27----------- Pelham	D	None------	---	---	0-1.0	Apparent	Jan-Apr	>60	---	---	High-----	High.
28----------- Plummer	D	None------	---	---	0-1.0	Apparent	Dec-Jul	>60	---	---	Moderate	High.
30:												
Pantego-----	D	None------	---	---	+2-0	Apparent	Jun-Mar	>60	---	---	High-----	High.
Bayboro-----	D	None------	---	---	+1-1.0	Apparent	Nov-May	>60	---	---	High-----	High.
31:												
Pickney-----	D	None------	---	---	+1-1.0	Apparent	Nov-Apr	>60	---	---	High-----	High.
Pamlico-----	D	Rare------	---	---	+2-0	Apparent	Dec-May	>60	4-20	10-36	High-----	High.
32----------- Rains	D	None------	---	---	0-1.0	Apparent	Nov-Apr	>60	---	---	High-----	High.
33----------- Resota	A	None------	---	---	3.5-5.0	Apparent	Dec-Apr	>60	---	---	Low------	High.
34:												
Pickney-----	D	None------	---	---	+1-1.0	Apparent	Nov-Apr	>60	---	---	High-----	High.
Rutlege-----	D	None------	---	---	+2-1.0	Apparent	Dec-May	>60	---	---	High-----	High.
35----------- Stilson	B	None------	---	---	2.5-3.0	Apparent	Dec-Apr	>60	---	---	Moderate	High.

Table 14.--Soil and Water Features--Continued

Soil name and map symbol	Hydro-logic group	Flooding: Frequency	Flooding: Duration	Flooding: Months	High water table: Depth	High water table: Kind	High water table: Months	Depth to bedrock	Subsidence: Ini-tial	Subsidence: Total	Risk of corrosion: Uncoated steel	Risk of corrosion: Concrete
					Ft			In	In	In		
36----------------- Sapelo	D	None------	---	---	0.5-1.5	Apparent	Nov-Apr	>60	---	---	High-----	High.
37----------------- Scranton	D	None------	---	---	0.5-1.5	Apparent	Nov-Apr	>60	---	---	Low------	High.
38----------------- Meadowbrook	D	Occasional	Brief----	Mar-Sep	0-1.0	Apparent	Aug-Mar	>60	---	---	Moderate	High.
39----------------- Surrency	D	None------	---	---	+1-0.5	Apparent	Jan-Dec	>60	---	---	High-----	High.
40----------------- Brickyard	D	Frequent--	Long-----	Jan-Apr	0-0.5	Apparent	Dec-Aug	>60	---	---	Moderate	Moderate.
41:												
Brickyard-------	D	Frequent--	Long-----	Jan-Apr	0-0.5	Apparent	Dec-Aug	>60	---	---	Moderate	Moderate.
Chowan----------	D	Frequent--	Very long	Nov-Apr	0-0.5	Apparent	Nov-May	>60	---	---	High-----	High.
Kenner----------	D	Frequent--	Very long	Jan-Dec	+1-0.5	Apparent	Jan-Dec	>60	15-30	>51	High-----	Moderate.
42----------------- Pottsburg	D	Rare------	---	---	0-0.5	Apparent	Feb-Sep	>60	---	---	High-----	High.
44:												
Pamlico---------	D	Frequent--	---	Jan-Dec	+1-0	Apparent	Jan-Dec	>60	4-12	10-29	High-----	High.
Pickney---------	D	Frequent--	---	Nov-Jul	+1-1.5	Apparent	Nov-Jun	>60	---	---	High-----	High.
45:												
Croatan---------	D	Frequent--	Very long	Jan-Dec	0-1.0	Apparent	Nov-May	>60	4-10	18-24	High-----	High.
Surrency--------	D	Frequent--	Very long	Dec-Mar	0-0.5	Apparent	Jan-Dec	>60	---	---	High-----	High.
46:												
Corolla---------	D	Rare------	---	---	1.5-3.0	Apparent	Nov-May	>60	---	---	Low------	Low.
Duckston--------	D	Occasional	Brief----	Jan-Dec	0-0.5	Apparent	Jan-Dec	>60	---	---	Low------	Low.
47:												
Newhan----------	A	Rare------	---	---	>6.0	---	---	>60	---	---	High-----	Low.
Corolla---------	D	Rare------	---	---	1.5-3.0	Apparent	Nov-May	>60	---	---	Low------	Low.
48:												
Kureb-----------	A	None------	---	---	>6.0	---	---	>60	---	---	Low------	Low.
Corolla---------	D	Rare------	---	---	1.5-3.0	Apparent	Nov-May	>60	---	---	Low------	Low.
49----------------- Quartzipsamments	A	None------	---	---	>6.0	---	---	>60	---	---	Low------	High.
50:												
Wahee-----------	C	Frequent--	Long-----	Dec-Apr	1.5-2.5	Apparent	Nov-Apr	>60	---	---	High-----	High.

Table 14.--Soil and Water Features--Continued

Soil name and map symbol	Hydro-logic group	Flooding: Frequency	Flooding: Duration	Flooding: Months	High water table: Depth	High water table: Kind	High water table: Months	Depth to bedrock	Subsidence: Ini-tial	Subsidence: Total	Risk of corrosion: Uncoated steel	Risk of corrosion: Concrete
					Ft			In	In	In		
50:												
Mantachie----	C	Occasional	Brief-----	Jan-Mar	1.0-1.5	Apparent	Dec-Mar	>60	---	---	High-----	High.
Ochlockonee--	B	Occasional	Very brief	Dec-Apr	3.0-5.0	Apparent	Dec-Apr	>60	---	---	Low------	High.
51:												
Kenansville--	A	None------	---	---	>6.0	---	---	>60	---	---	Low------	High.
Eulonia------	C	None------	---	---	1.5-3.5	Apparent	Dec-May	>60	---	---	Moderate	High.
52------------ Dothan	B	None------	---	---	3.0-5.0	Perched	Jan-Apr	>60	---	---	Moderate	Moderate.

Table 15.--Classification of the Soils

Soil name	Family or higher taxonomic class
Alapaha	Loamy, siliceous, thermic Arenic Plinthic Paleaquults
Albany	Loamy, siliceous, thermic Grossarenic Paleudults
Aquents	Aquents
Bayboro	Clayey, mixed, thermic Umbric Paleaquults
Bayvi	Sandy, siliceous, thermic Cumulic Haplaquolls
Bladen	Clayey, mixed, thermic Typic Albaquults
Blanton	Loamy, siliceous, thermic Grossarenic Paleudults
Brickyard	Fine, montmorillonitic, nonacid, thermic Aeric Fluvaquents
Chowan	Fine-silty, mixed, nonacid, thermic Thapto-Histic Fluvaquents
Clarendon	Fine-loamy, siliceous, thermic Plinthaquic Paleudults
Corolla	Thermic, uncoated Aquic Quartzipsamments
Croatan	Loamy, siliceous, dysic, thermic Terric Medisaprists
Dirego	Sandy or sandy-skeletal, siliceous, euic, thermic Terric Sulfisaprists
Dorovan	Dysic, thermic Typic Medisaprists
Dothan	Fine-loamy, siliceous, thermic Plinthic Kandiudults
Duckston	Siliceous, thermic Typic Psammaquents
Eulonia	Clayey, mixed, thermic Aquic Hapludults
*Fuquay	Loamy, siliceous, thermic Arenic Plinthic Kandiudults
Kenansville	Loamy, siliceous, thermic Arenic Hapludults
Kenner	Euic, thermic Fluvaquentic Medisaprists
Kureb	Thermic, uncoated Spodic Quartzipsamments
Leefield	Loamy, siliceous, thermic Arenic Plinthaquic Paleudults
Leon	Sandy, siliceous, thermic Aeric Alaquods
Lucy	Loamy, siliceous, thermic Arenic Kandiudults
Lynn Haven	Sandy, siliceous, thermic Typic Alaquods
Mandarin	Sandy, siliceous, thermic Oxyaquic Alorthods
Mantachie	Fine-loamy, siliceous, acid, thermic Aeric Endoaquepts
Maurepas	Euic, thermic Typic Medisaprists
Meadowbrook	Loamy, siliceous, thermic Grossarenic Endoaqualfs
Meggett	Fine, mixed, thermic Typic Albaqualfs
Newhan	Thermic, uncoated Typic Quartzipsamments
Ochlockonee	Coarse-loamy, siliceous, acid, thermic Typic Udifluvents
Ocilla	Loamy, siliceous, thermic Aquic Arenic Paleudults
Ortega	Thermic, uncoated Typic Quartzipsamments
Pamlico	Sandy or sandy-skeletal, siliceous, dysic, thermic Terric Medisaprists
Pantego	Fine-loamy, siliceous, thermic Umbric Paleaquults
Pelham	Loamy, siliceous, thermic Arenic Paleaquults
Pickney	Sandy, siliceous, thermic Cumulic Humaquepts
Plummer	Loamy, siliceous, thermic Grossarenic Paleaquults
Pottsburg	Sandy, siliceous, thermic Grossarenic Alaquods
Quartzipsamments	Quartzipsamments
Rains	Fine-loamy, siliceous, thermic Typic Paleaquults
Resota	Thermic, uncoated Spodic Quartzipsamments
Ridgewood	Thermic, uncoated Aquic Quartzipsamments
Rutlege	Sandy, siliceous, thermic Typic Humaquepts
Sapelo	Sandy, siliceous, thermic Ultic Alaquods
Scranton	Siliceous, thermic Humaqueptic Psammaquents
Stilson	Loamy, siliceous, thermic Arenic Plinthic Paleudults
Surrency	Loamy, siliceous, thermic Arenic Umbric Paleaquults
Tawcaw	Fine, kaolinitic, thermic Fluvaquentic Dystrochrepts
Wahee	Clayey, mixed, thermic Aeric Endoaquults

* Taxadjunct

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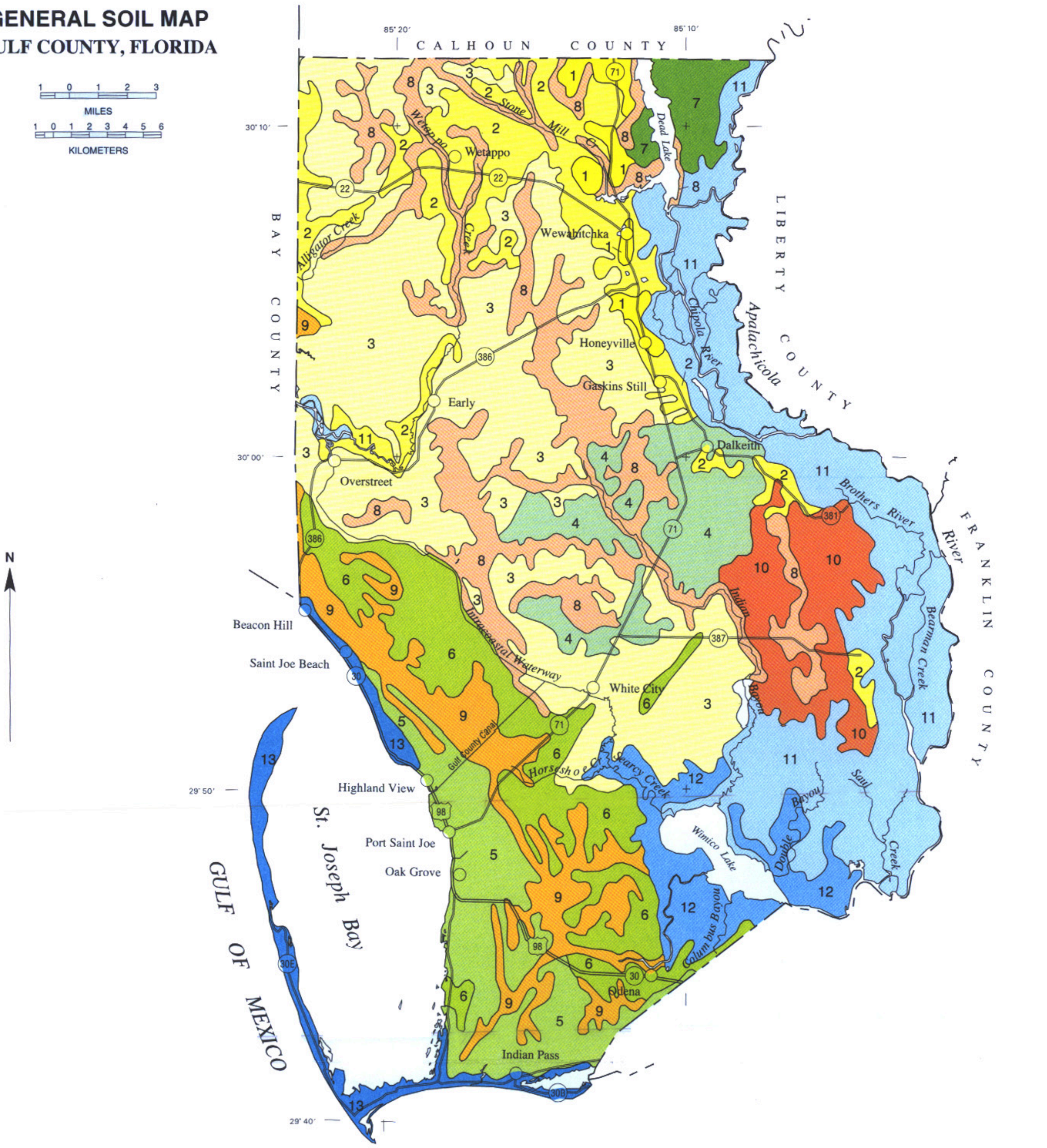
GENERAL SOIL MAP
GULF COUNTY, FLORIDA



SOIL LEGEND*

SOILS ON UPLANDS AND IN AREAS OF FLATWOODS

1 Stilson-Fuquay-Dothan

2 Leefield-Albany-Blanton

SOILS IN AREAS OF FLATWOODS, ON LOW FLATS, IN DEPRESSIONS, AND ON TERRACES

3 Pelham-Plummer-Alapaha

4 Rains-Bladen

5 Leon-Pickney-Mandarin

6 Scranton-Pickney-Leon

7 Bladen-Wahee-Kenansville

8 Surrency-Pantego-Croatan

9 Pickney-Pamlico

SOILS ON RIVER FLOOD PLAINS AND LOW TERRACES ALONG RIVERS

10 Megget-Ocilla

11 Brickyard-Chowan-Wahee

12 Maurepas-Pamlico

SOILS ON THE COASTAL STRAND

13 Corolla-Duckston-Kureb

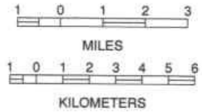
*The units on this legend are described in the text under the heading "General Soil Map Units."

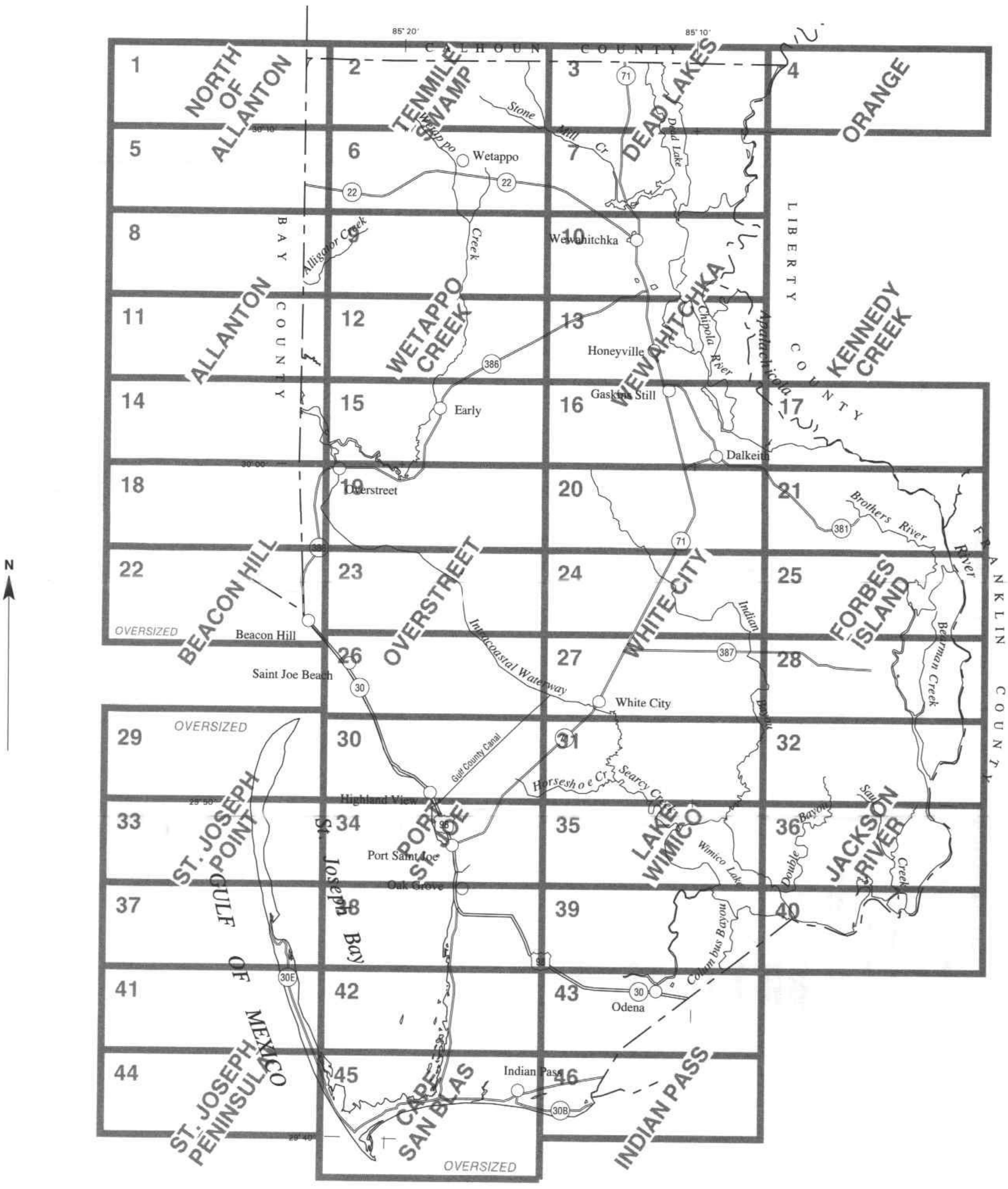
UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE
in cooperation with
UNIVERSITY OF FLORIDA, INSTITUTE OF FOOD AND AGRICULTURAL SCIENCES, AGRICULTURAL EXPERIMENT STATIONS, AND SOIL AND WATER SCIENCE DEPARTMENT; AND FLORIDA DEPARTMENT OF AGRICULTURAL AND CONSUMER SERVICES

Each area outlined on this map consists of more than one kind of soil. The map is thus meant for general planning rather than a basis for decisions on the use of specific tracts.

Compiled 1997

INDEX TO MAP SHEETS
GULF COUNTY, FLORIDA





SOIL LEGEND

Map symbols consist of numbers that represent the kind of soil. Soil names without a slope phase are nearly level soils or miscellaneous

SYMBOL	NAME
2	Albany sand
3	Alapaha loamy fine sand
4	Aquents, gently undulating
5	Bladen fine sandy loam
6	Blanton sand, 0 to 5 percent slopes
7	Bayvi and Dirego soils, frequently flooded
8	Beaches
9	Ridgewood fine sand
10	Corolla fine sand, 1 to 5 percent slopes
11	Clarendon loamy fine sand, 2 to 5 percent slopes
12	Dothan-Fuquay complex, 5 to 8 percent slopes
13	Dorovan-Croatan complex, depressional
14	Duckston-Duckston, depressional, complex, frequently
15	Wahee fine sandy loam
16	Ortega fine sand, 0 to 5 percent slopes
17	Fuquay loamy fine sand
19	Lucy loamy fine sand, 0 to 5 percent slopes
20	Lynn Haven fine sand
21	Leefield loamy fine sand
22	Leon fine sand
23	Maurepas muck, frequently flooded
24	Mandarin fine sand
25	Meggett fine sandy loam, occasionally flooded
26	Ocilla loamy fine sand, overwash, occasionally flooded
27	Pelham loamy fine sand
28	Plummer fine sand
30	Pantego and Bayboro soils, depressional
31	Pickney-Pamlico complex, depressional
32	Rains fine sandy loam
33	Resota fine sand, 0 to 5 percent slopes
34	Pickney and Rutlege soils, depressional
35	Stilson loamy fine sand, 0 to 5 percent slopes
36	Sapelo sand
37	Scranton fine sand
38	Meadowbrook fine sand, occasionally flooded
39	Surrency mucky fine sand, depressional
40	Brickyard silty clay, frequently flooded
41	Brickyard, Chowan, and Kenner soils, frequently flooded
42	Pottsburg fine sand
44	Pamlico-Pickney complex, frequently flooded
45	Croatan-Surrency complex, frequently flooded
46	Corolla-Duckston complex, gently undulating, flooded
47	Newhan-Corolla complex, rolling
48	Kureb-Corolla complex, rolling
49	Quartzipsamments, undulating
50	Wahee-Mantachie-Ochlockonee complex, commonly flooded
51	Kenansville-Eulonia complex, 0 to 5 percent slopes
52	Dothan loamy sand, 2 to 5 percent slopes

CONVENTIONAL AND SPECIAL SYMBOLS LEGEND

CULTURAL FEATURES

BOUNDARIES

County or parish

Field sheet matchline and neatline

AD HOC BOUNDARY (label)

Small airport, airfield, park, oilfield, cemetery, or flood pool

STATE COORDINATE TICK
1 890 000 FEET

LAND DIVISION CORNER (sections and land grants)

ROAD EMBLEM & DESIGNATIONS

Federal — 287

State — 52

County, farm or ranch — 1283

RAILROAD

PITS

Gravel pit

WATER FEATURES

DRAINAGE

Perennial, double line

Perennial, single line

Intermittent

Drainage end

Canals or ditches

Double-line (label) — CANAL

Drainage and/or irrigation

LAKES, PONDS AND RESERVOIRS

Perennial — water

MISCELLANEOUS WATER FEATURES

Wet spot

SPECIAL SYMBOLS FOR SOIL SURVEY

SOIL DELINEATIONS AND SYMBOLS — 2 27

DEPRESSION OR SINK

SOIL SAMPLE (normally not shown)

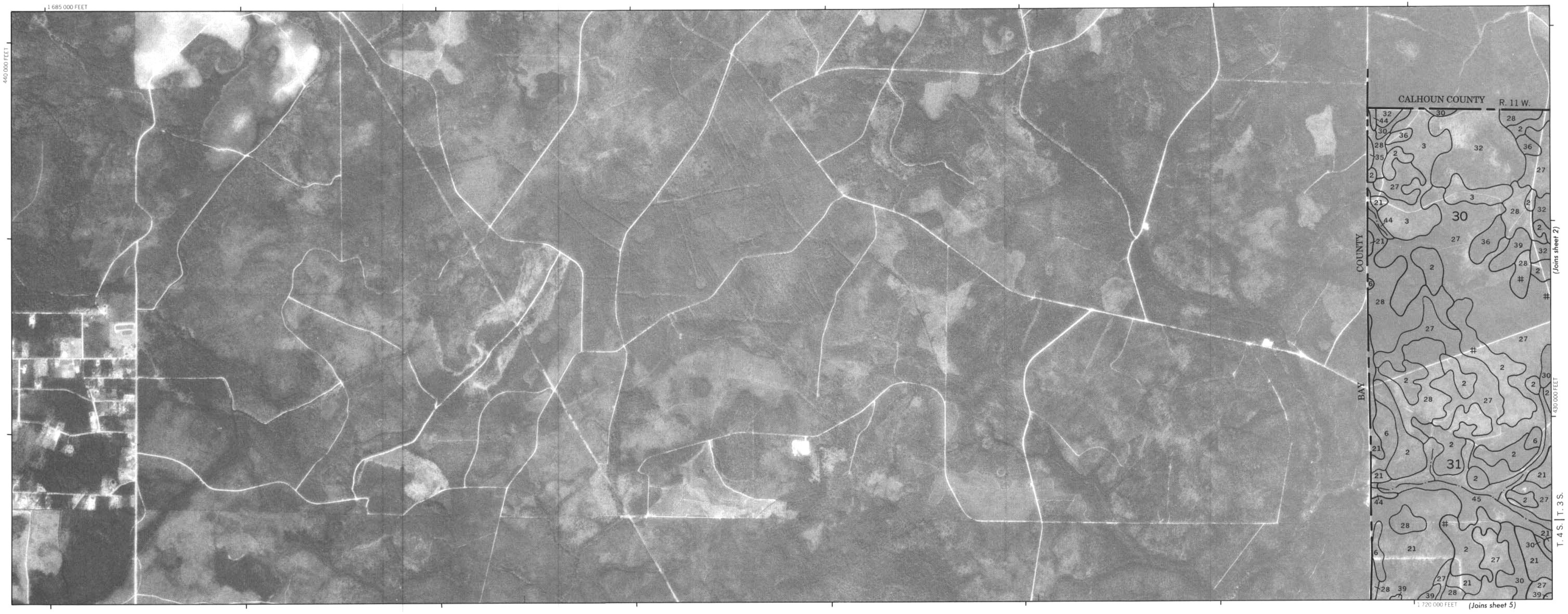
MISCELLANEOUS

Ponds less than 3 acres in size

SOIL SURVEY OF GULF COUNTY, FLORIDA — SHEET NUMBER 1

1

N

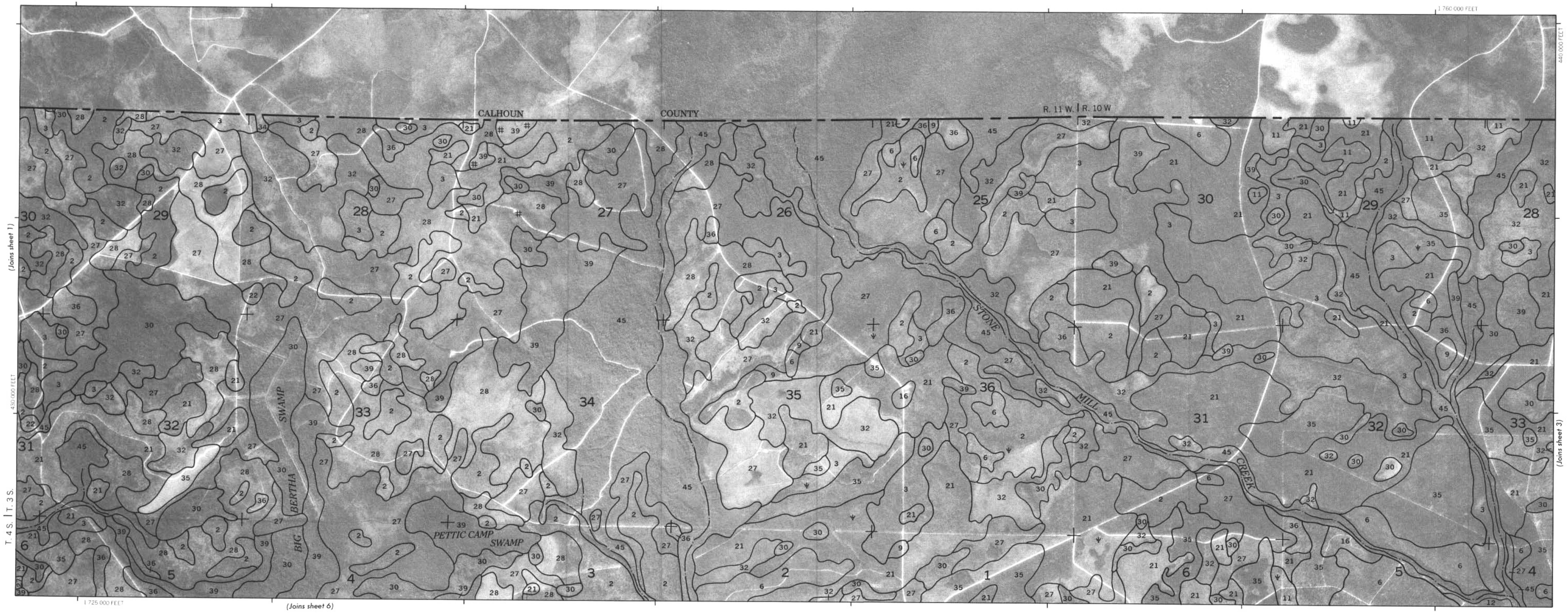


1 3/4 1/2 1/4 0 1 2 MILES

1 0.5 0 1 2 KILOMETERS

2

N



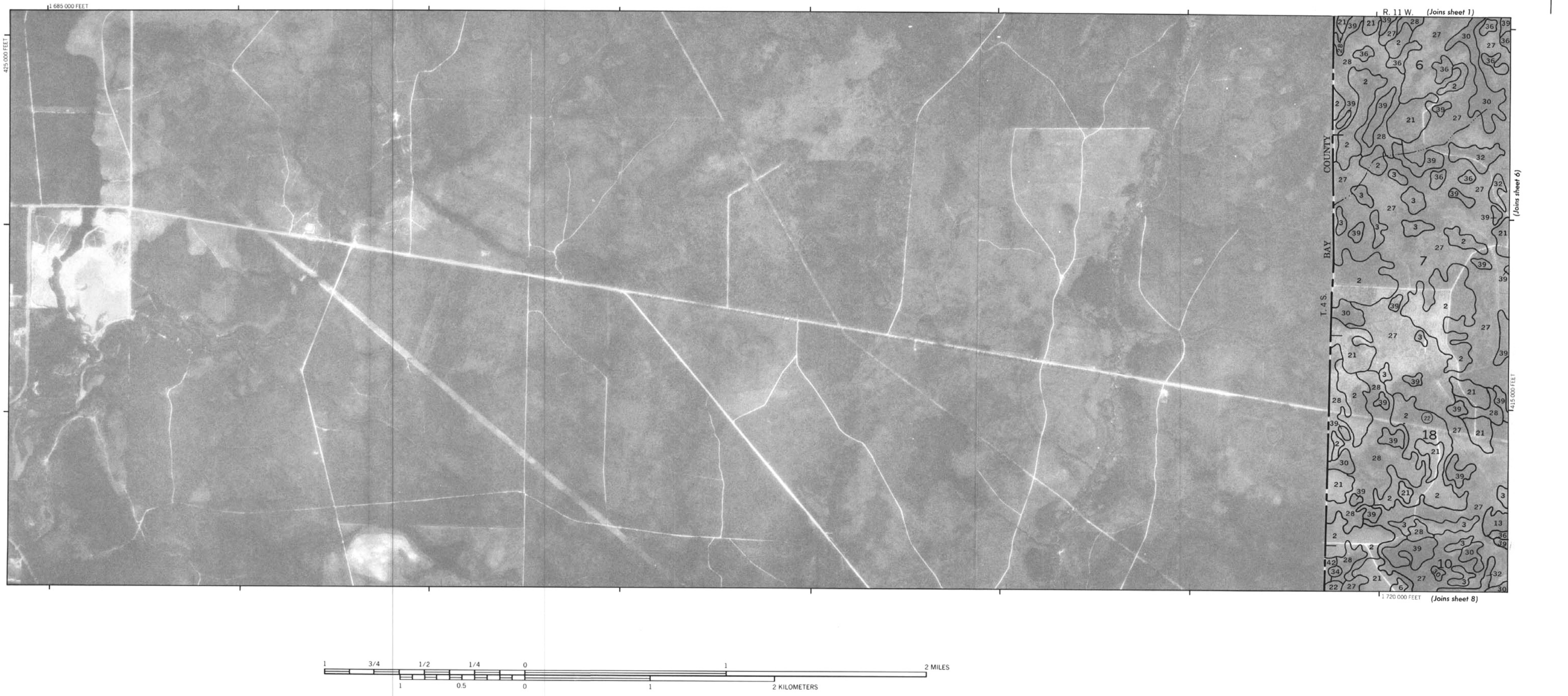
1 3/4 1/2 1/4 0 1 2 MILES

1 0.5 0 1 2 KILOMETERS

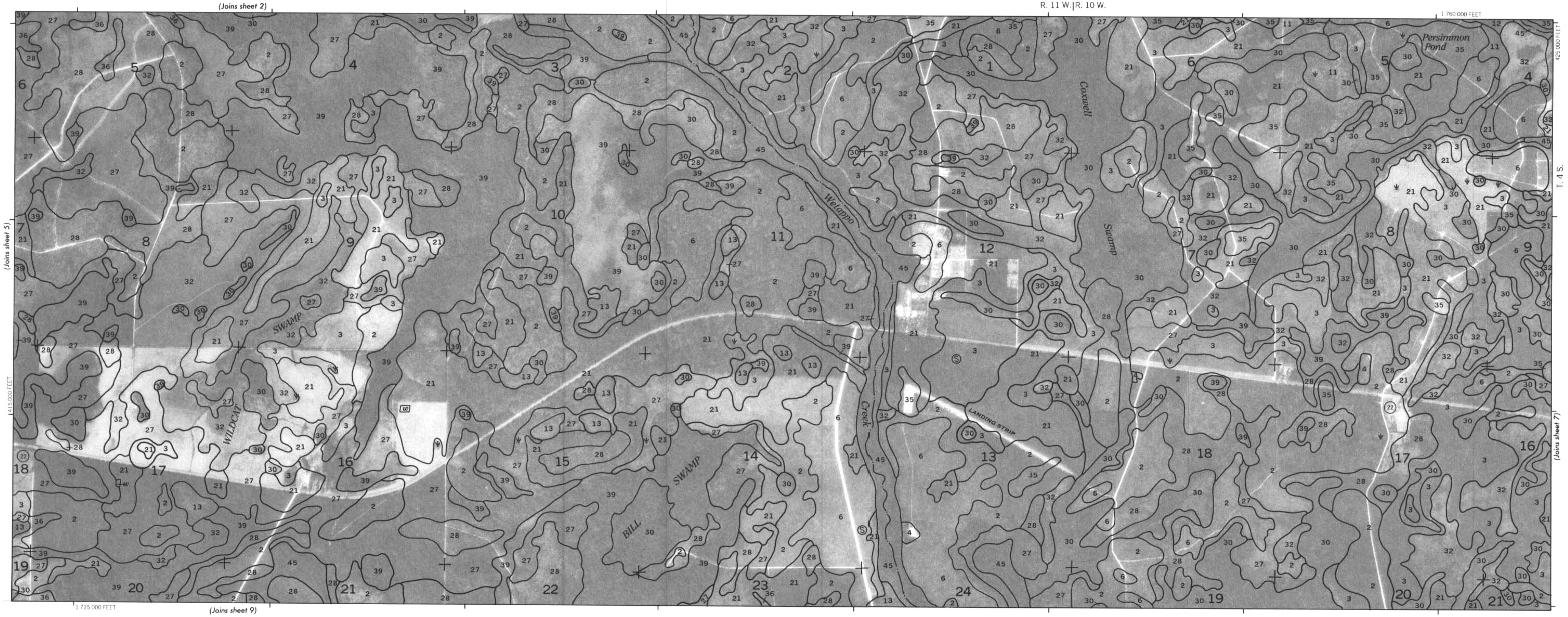

N
1 765 000 FEET
1 800 000 FEET
CALHOUN COUNTY
R. 10 W. | R. 9 W.
PORTER LANDING ROAD
DEAD LAKE
APALACHICOLA RIVER
LIBERTY COUNTY
(Joins sheet 4)
(Joins sheet 2)
(Joins sheet 7)
T. 4 S. | T. 3 S.
1 3/4 1/2 1/4 0 1 2 MILES
1 0.5 0 1 2 KILOMETERS

4


N
R. 9 W.
CALHOUN COUNTY
16
40
PORTER LANDING
40
50
APALACHICOLA
RIVER
LIBERTY
COUNTY
T. 3 S.
(Joins sheet 3)
1 805 000 FEET
1 840 000 FEET
1 3/4 1/2 1/4 0 1 2 MILES
1 0.5 0 1 2 KILOMETERS


N
1 685 000 FEET
425 000 FEET
R. 11 W.
(Joins sheet 1)
(Joins sheet 6)
(Joins sheet 8)
415 000 FEET
1 720 000 FEET
BAY COUNTY
T. 4 S.
1 3/4 1/2 1/4 0 1 2 MILES
1 0.5 0 1 2 KILOMETERS

N



1 3/4 1/2 1/4 0 1 2 MILES

1 0.5 0 1 2 KILOMETERS

N

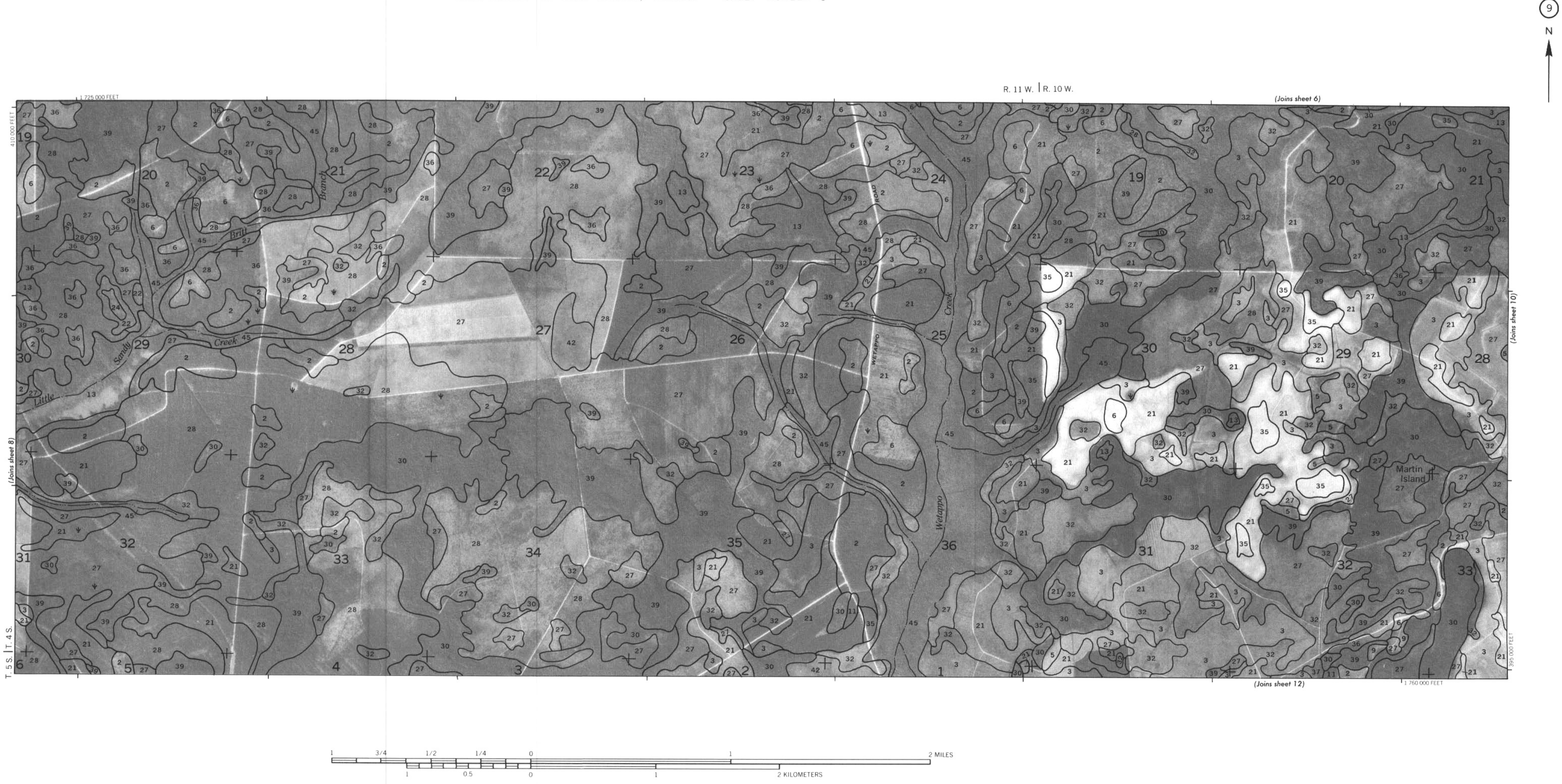

R. 10 W. | R. 9 W.
(Joins sheet 3)
(Joins sheet 6)
(Joins sheet 10)
T. 4 S.
1 765 000 FEET
425 000 FEET
410 000 FEET
1 800 000 FEET
DEAD LAKE
Iola
West Arm Creek
Chipola Cutoff
Woodcock Lake
APPALACHICOLA RIVER
LIBERTY COUNTY
1 3/4 1/2 1/4 0 1 2 MILES
1 0.5 0 1 2 KILOMETERS

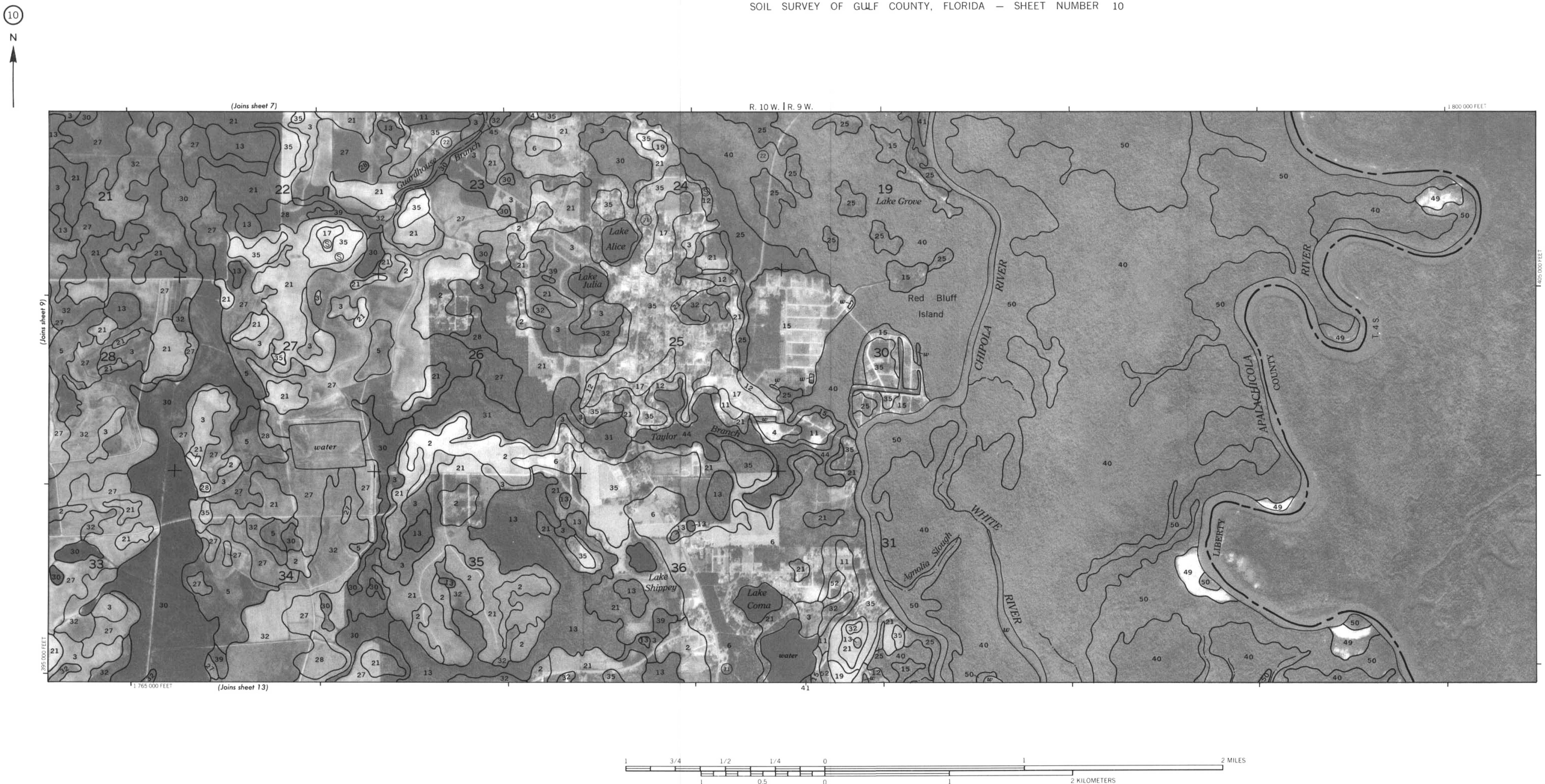
8

N

1 3/4 1/2 1/4 0 1 2 MILES

1 0.5 0 1 2 KILOMETERS


9
N
R. 11 W. | R. 10 W.
1 725 000 FEET
410 000 FEET
(Joins sheet 6)
(Joins sheet 8)
(Joins sheet 10)
(Joins sheet 12)
1 760 000 FEET
395 000 FEET
T. 5 S. | T. 4 S.
Little Sandy Creek
Britt Creek
Branch
Wetappo Creek
WETAPPO ROAD
Martin Island
1
3/4
1/2
1/4
0
1
2 MILES
1
0.5
0
1
2 KILOMETERS


10
N
(Joins sheet 7)
R. 10 W. | R. 9 W.
1 800 000 FEET
(Joins sheet 9)
405 000 FEET
395 000 FEET
1 765 000 FEET
(Joins sheet 13)
Guardhouse Branch
Lake Alice
Lake Julia
Lake Grove
Red Bluff Island
CHIPOLA RIVER
APALACHICOLA RIVER
LIBERTY COUNTY
T. 4 S.
Taylor Branch
water
WHITE RIVER
Agnolia Slough
Lake Shippey
Lake Coma
1 3/4 1/2 1/4 0 1 2 MILES
1 0.5 0 1 2 KILOMETERS

11

N

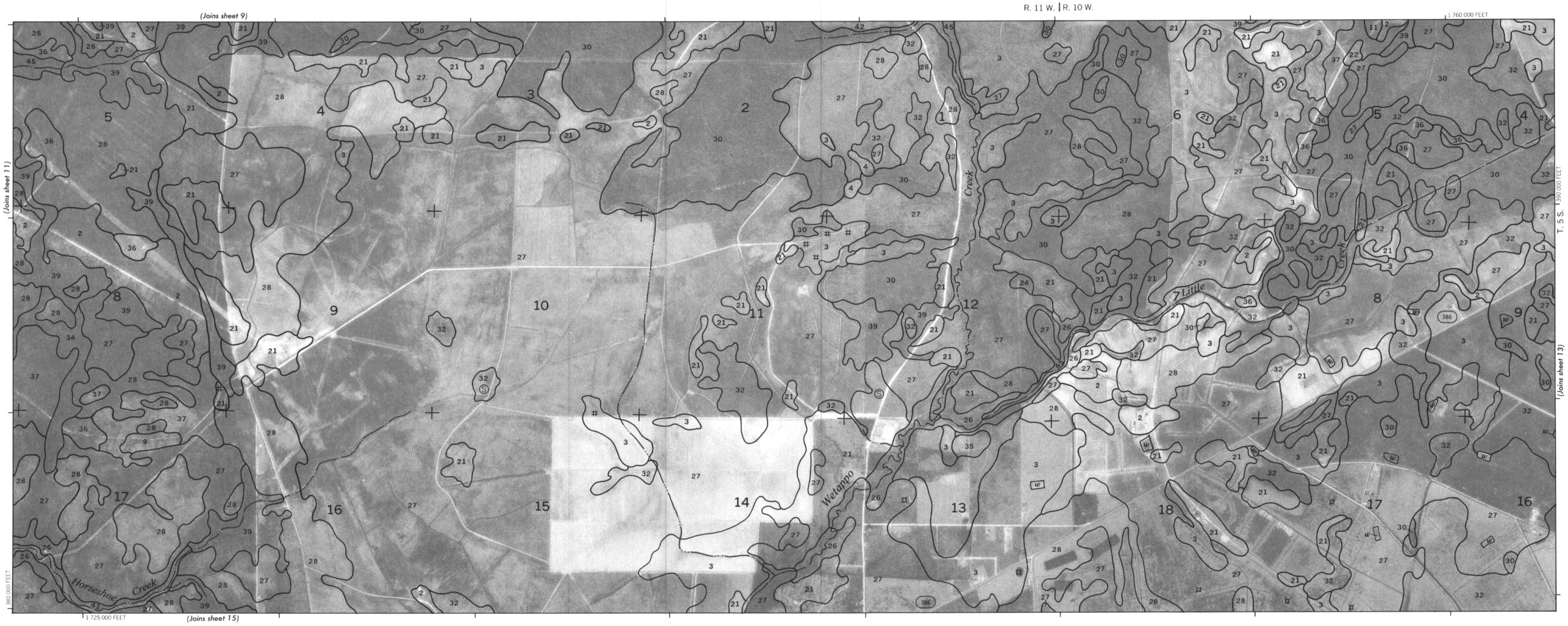
1 685 000 FEET
395 000 FEET
R. 11 W.
(Joins sheet 8)
Williams Bay
T. 5 S.
BAY COUNTY
Horseshoe Creek
(Joins sheet 12)
1 720 000 FEET
(Joins sheet 14)
380 000 FEET

1 3/4 1/2 1/4 0 1 2 MILES
1 0.5 0 1 2 KILOMETERS

12

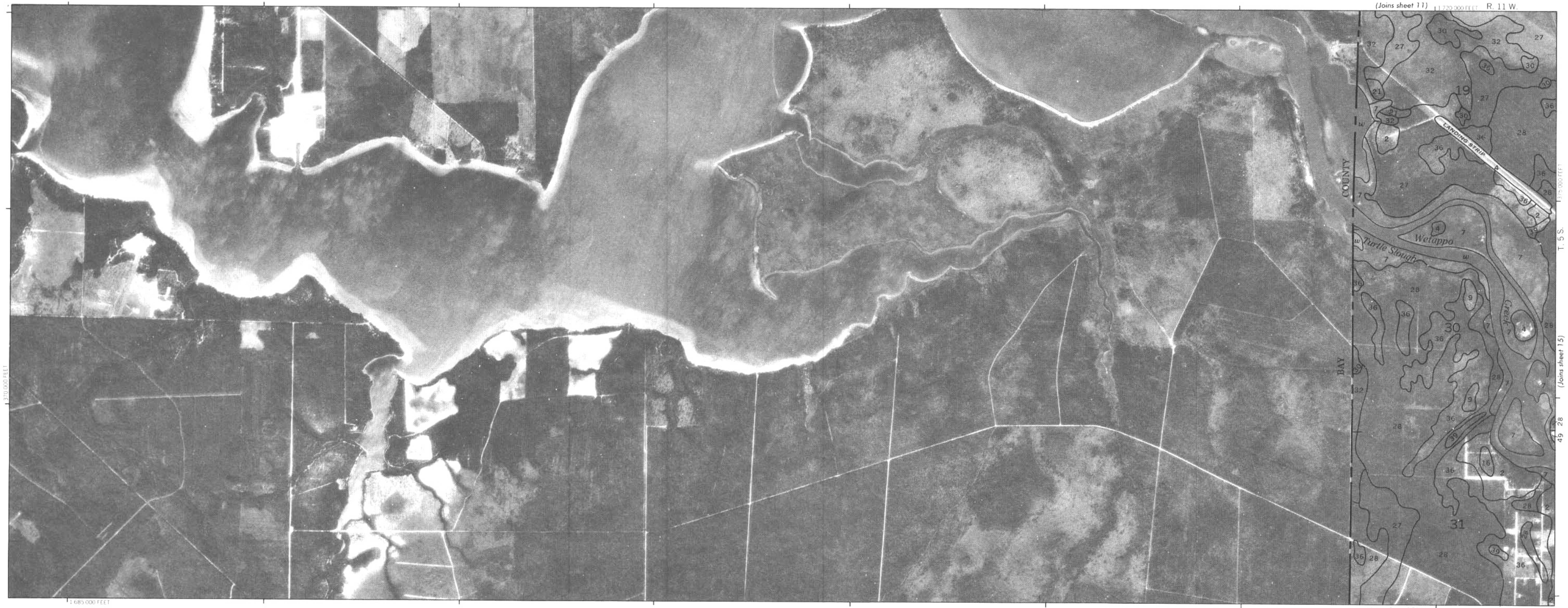
N

SOIL SURVEY OF GULF COUNTY, FLORIDA — SHEET NUMBER 12



13
N
R. 10 W. | R. 9 W.
(Joins sheet 10)
(Joins sheet 12)
(Joins sheet 16)
T. 5 S.
Honeyville
Maddox Slough
Gum Drift Slough
Roberts Slough
Burgess Creek
CHIPOLA RIVER
Corley Slough
Cutoff Island
VIRGINIA CUT
APALACHICOLA RIVER
LIBERTY COUNTY
2 MILES
2 KILOMETERS

N



1 3/4 1/2 1/4 0 1 2 MILES

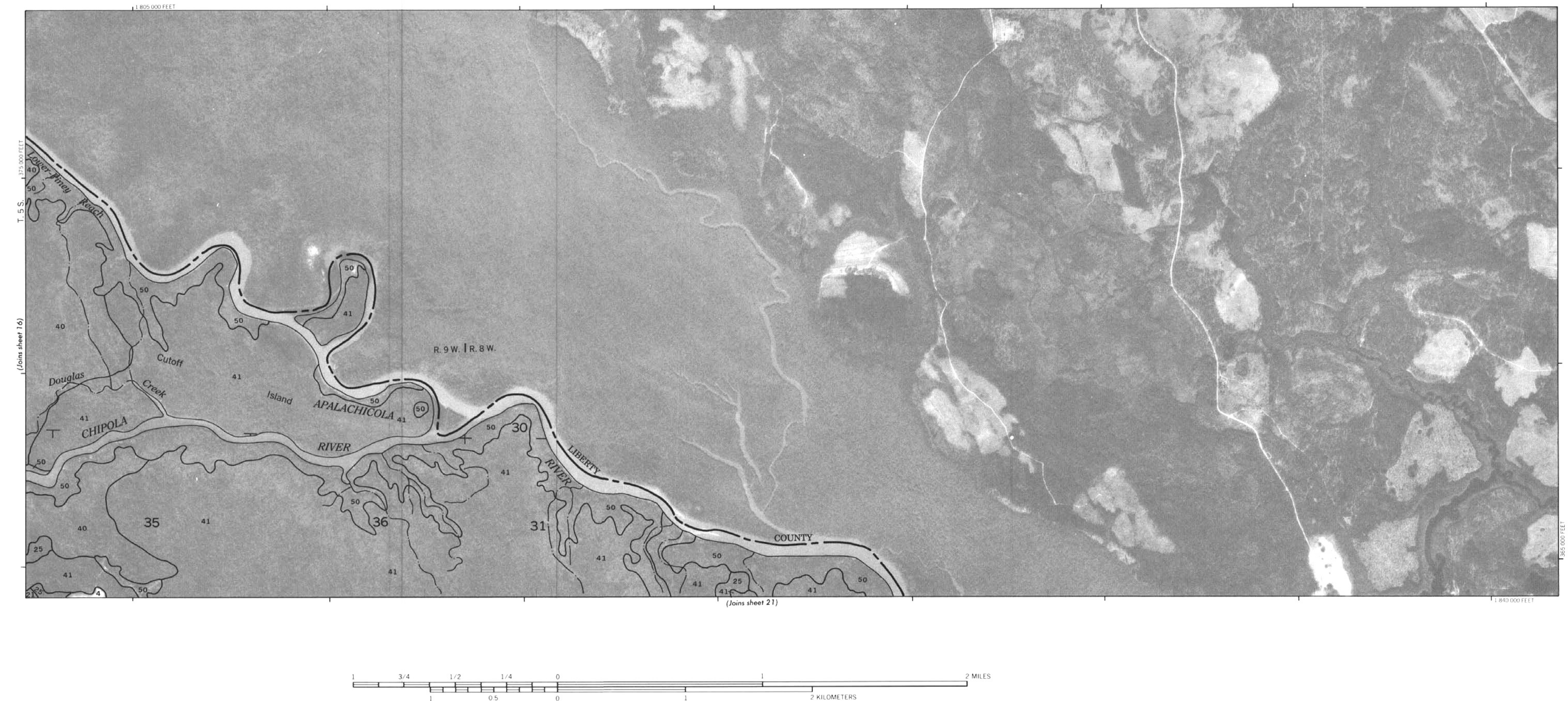
1 0.5 0 1 2 KILOMETERS


N
R. 11 W.
R. 10 W.
(Joins sheet 12)
(Joins sheet 16)
(Joins sheet 14)
(Joins sheet 19)
T. 5 S.
Wetappo
Creek
Wilburn
Branch
Creek
CERSER SWAMP
Brushy Island
2 MILES
2 KILOMETERS

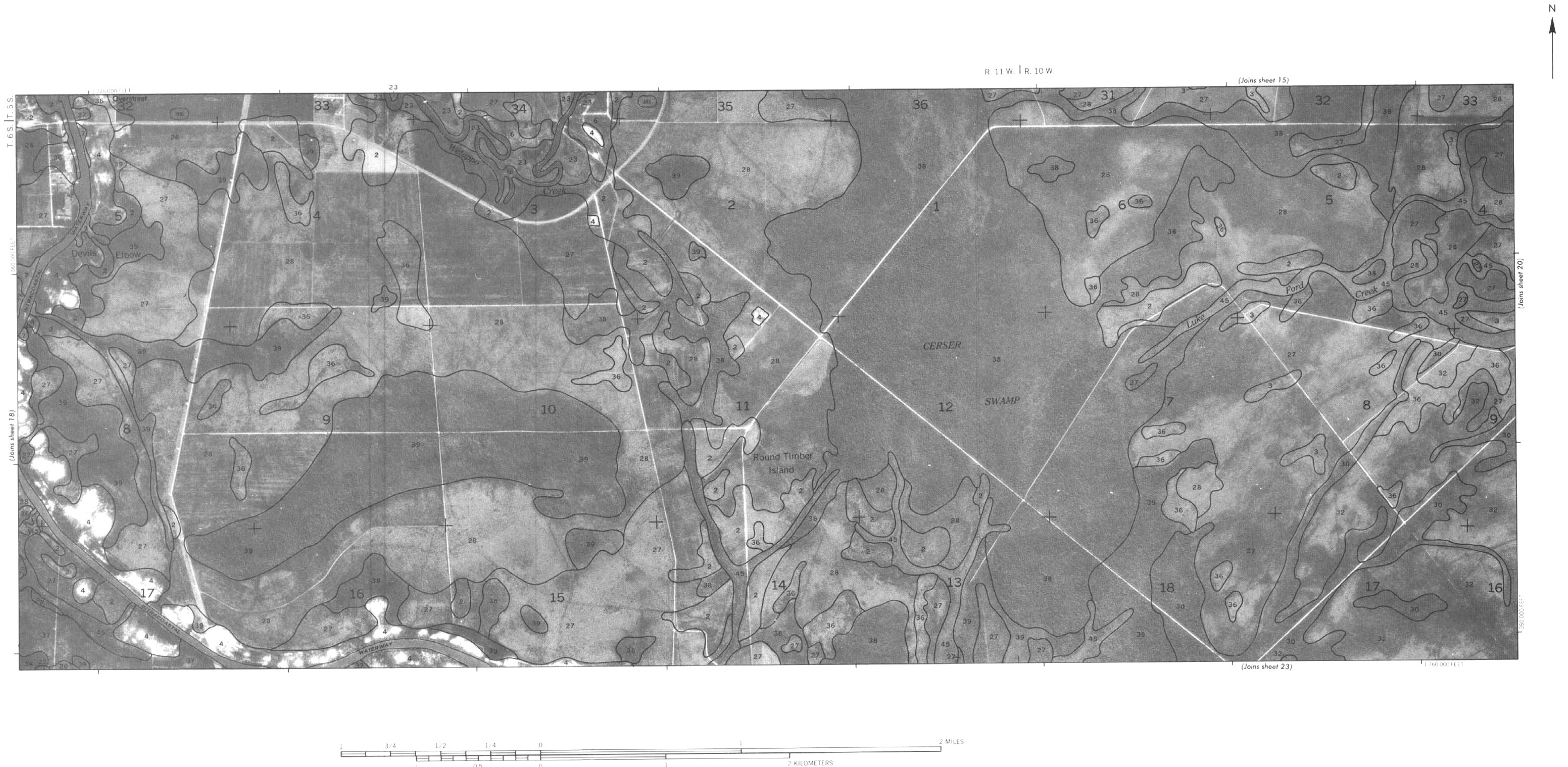

16
N
(Joins sheet 13)
R. 10 W. | R. 9 W.
(Joins sheet 15)
(Joins sheet 17)
(Joins sheet 20)
T. 5 S.
BURGESS LANDING
Burgess Creek
CHIPOLA RIVER
APALACHICOLA RIVER
LIBERTY COUNTY
Cutoff Slough
Piney Reach
Island
Boggy
Jordan
Lockey Lake
BRYANTS LANDING
DOUGLAS LANDING
Dalkeith
1 765 000 FEET
1 800 000 FEET
375 000 FEET
365 000 FEET
2 MILES
2 KILOMETERS

17

N


1 805 000 FEET
375 000 FEET
T. 5 S.
(Joins sheet 16)
Lower Piney Reach
Douglas
Cutoff
Creek
Island
CHIPOLA
RIVER
APALACHICOLA
RIVER
LIBERTY
COUNTY
R. 9 W. | R. 8 W.
30
31
35
36
40
50
41
25
4
(Joins sheet 21)
365 000 FEET
1 840 000 FEET
1
3/4
1/2
1/4
0
1
2 MILES
1
0.5
0
1
2 KILOMETERS

SOIL SURVEY OF GULF COUNTY, FLORIDA — SHEET NUMBER 18


N
R. 11 W. | R. 10 W.
T. 6 S. | T. 5 S.
(Joins sheet 15)
(Joins sheet 18)
(Joins sheet 20)
(Joins sheet 23)
Overstreet
Wetappo Creek
Devils Elbow
Round Timber Island
CERSER SWAMP
Luke Ford Creek
INTRACOASTAL WATERWAY
1 3/4 1/2 1/4 0 1 2 MILES
1 0.5 0 1 2 KILOMETERS

N

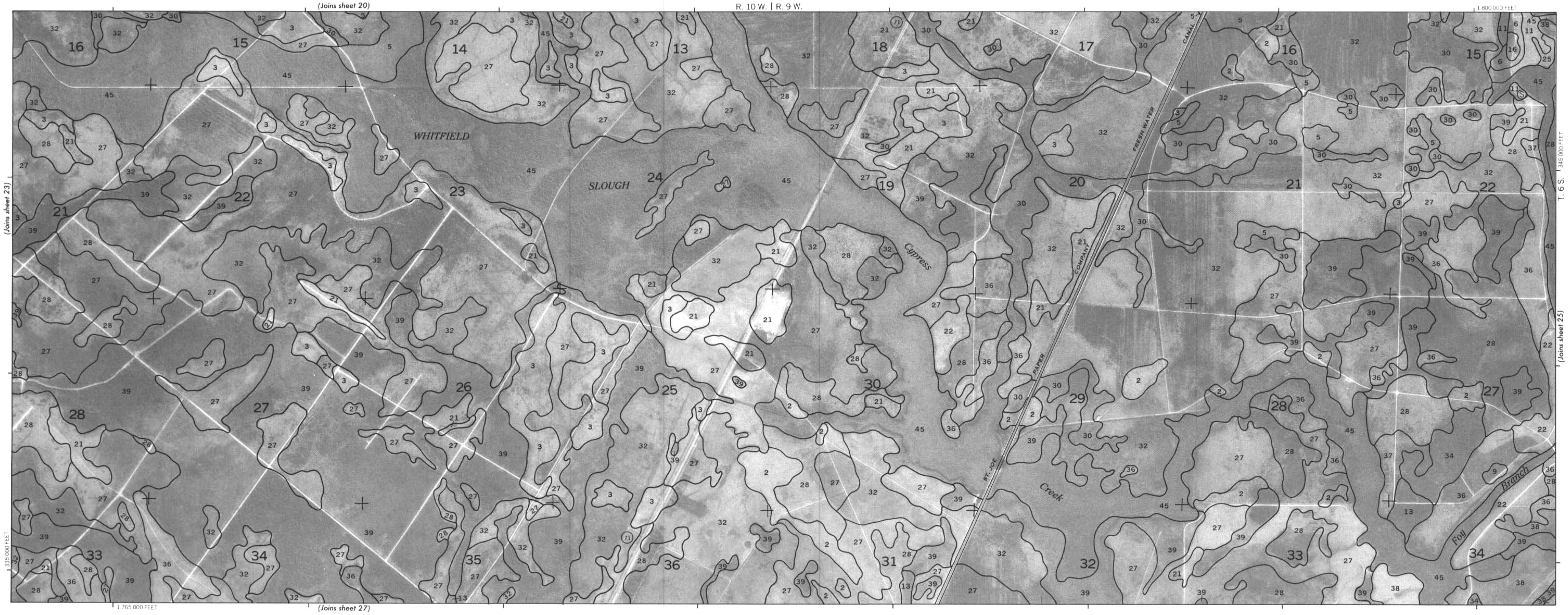

(Joins sheet 16)
R. 10 W. | R. 9 W.
1 800 000 FEET
T. 6 S. | T. 5 S.
360 000 FEET
(Joins sheet 19)
(Joins sheet 21)
Cypress Creek
St. Joe Paper Company Canal
350 000 FEET
1 765 000 FEET
(Joins sheet 24)


1
3/4
1/2
1/4
0
1
2 MILES
1
0.5
0
1
2 KILOMETERS


21
N
(Joins sheet 17)
(Joins sheet 20)
(Joins sheet 25)
R. 9 W. R. 8 W.
T. 5 S.
T. 6 S.
1 805 000 FEET
1 840 000 FEET
360 000 FEET
350 000 FEET
Richard Lake
Page Branch
ROBINSON BAY
WILLIS LANDING
Lower Elbow
LIBERTY COUNTY
APALACHICOLA RIVER
FRANKLIN COUNTY
BROTHERS RIVER
2 MILES
2 KILOMETERS


22
N
(Joins sheet 18)
1 720 000 FEET
R. 11 W.
Cypress Creek
BAY COUNTY
PANTHER SWAMP
Beacon Hill
T. 6 S.
345 000 FEET
335 000 FEET
1 685 000 FEET
(Joins sheet 23)
(Joins sheet 26)
GULF OF MEXICO
1 3/4 1/2 1/4 0 1 2 MILES
1 0.5 0 1 2 KILOMETERS

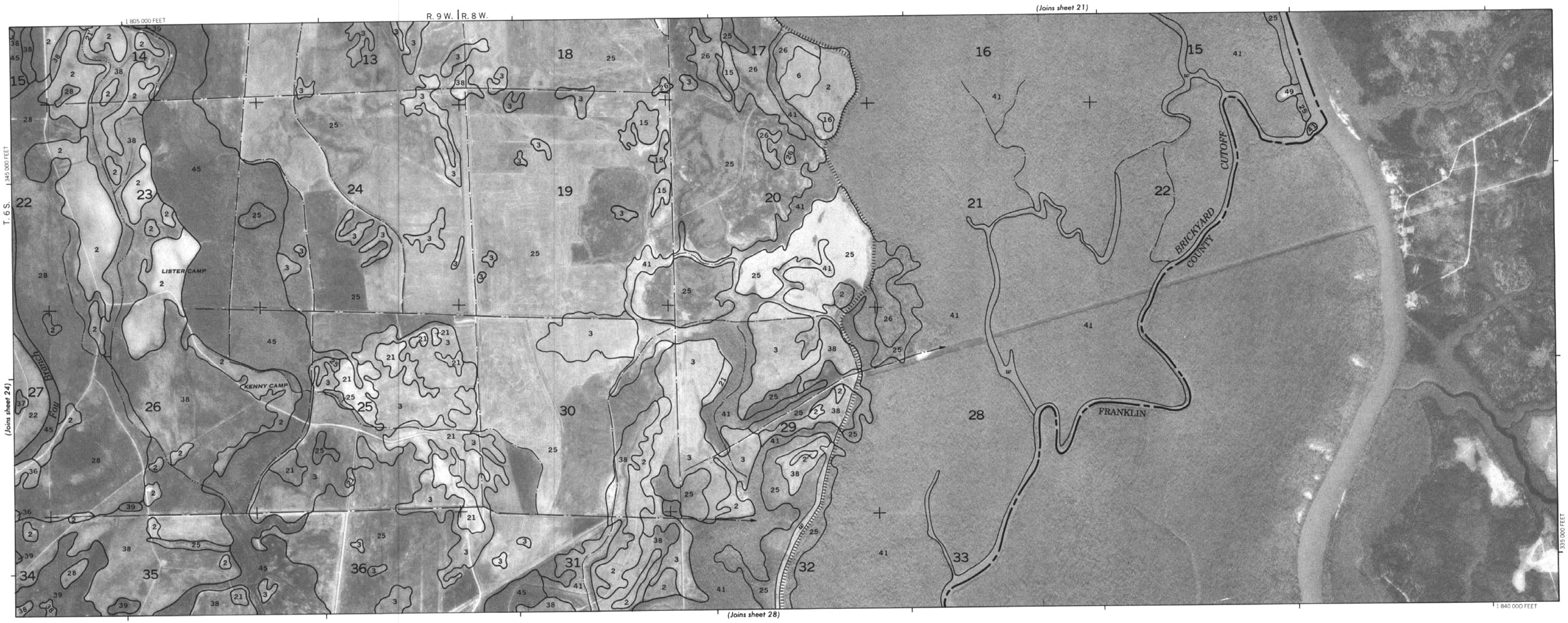

23
N
R. 11 W. | R. 10 W.
(Joins sheet 19)
(Joins sheet 22)
(Joins sheet 24)
(Joins sheet 26)
T. 6 S.
1 725 000 FEET
1 760 000 FEET
345 000 FEET
335 000 FEET
HARRISON SWAMP
INTRACOASTAL WATERWAY
WHITFIELD SLOUGH
Browns Bay
PANTHER SWAMP
1 3/4 1/2 1/4 0 1 2 MILES
1 0.5 0 1 2 KILOMETERS


(Joins sheet 20)
R. 10 W. | R. 9 W.
1 800 000 FEET
(Joins sheet 23)
(Joins sheet 25)
(Joins sheet 27)
T. 6 S.
345 000 FEET
335 000 FEET
1 765 000 FEET
WHITFIELD
SLOUGH
Cypress
Creek
FRESH WATER
CANAL
ST. JOE
PAPER
COMPANY
Foy
Branch


1
3/4
1/2
1/4
0
1
2 MILES
1
0.5
0
1
2 KILOMETERS

25

N

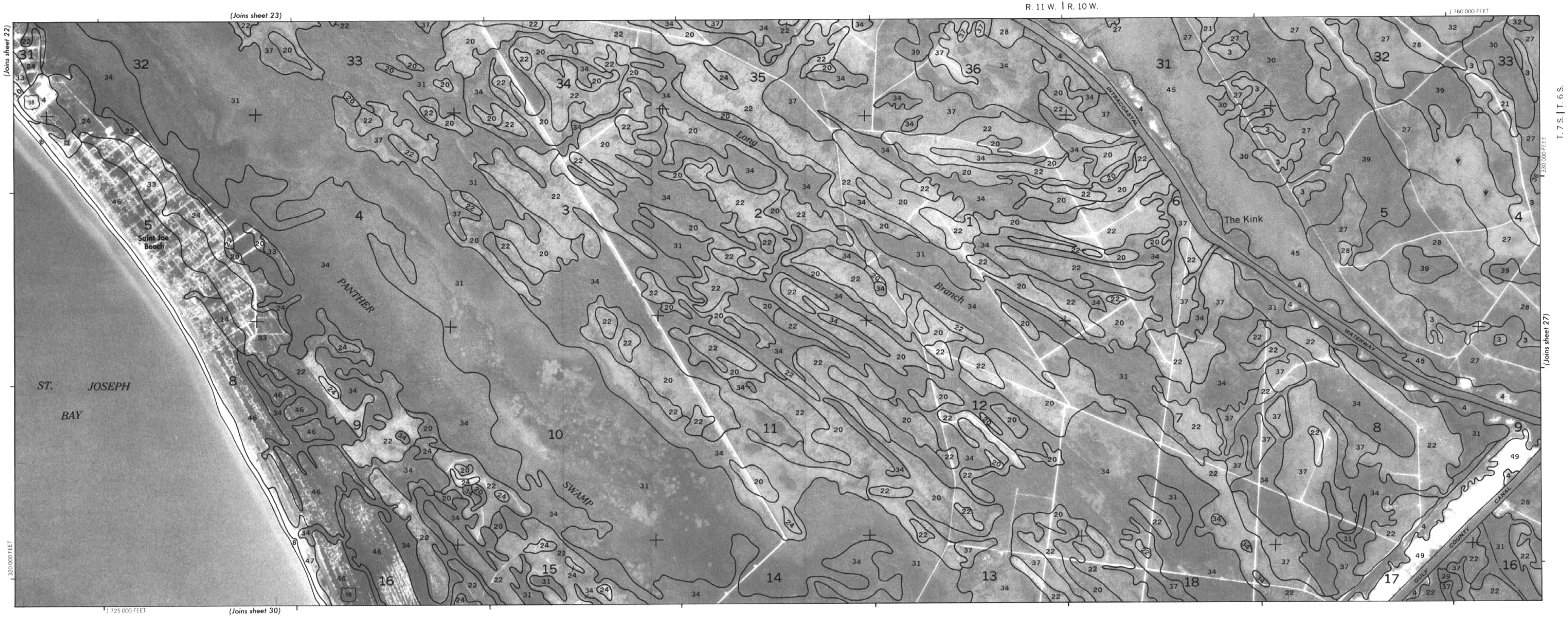


1 3/4 1/2 1/4 0 1 2 MILES

1 0.5 0 1 2 KILOMETERS

26

N

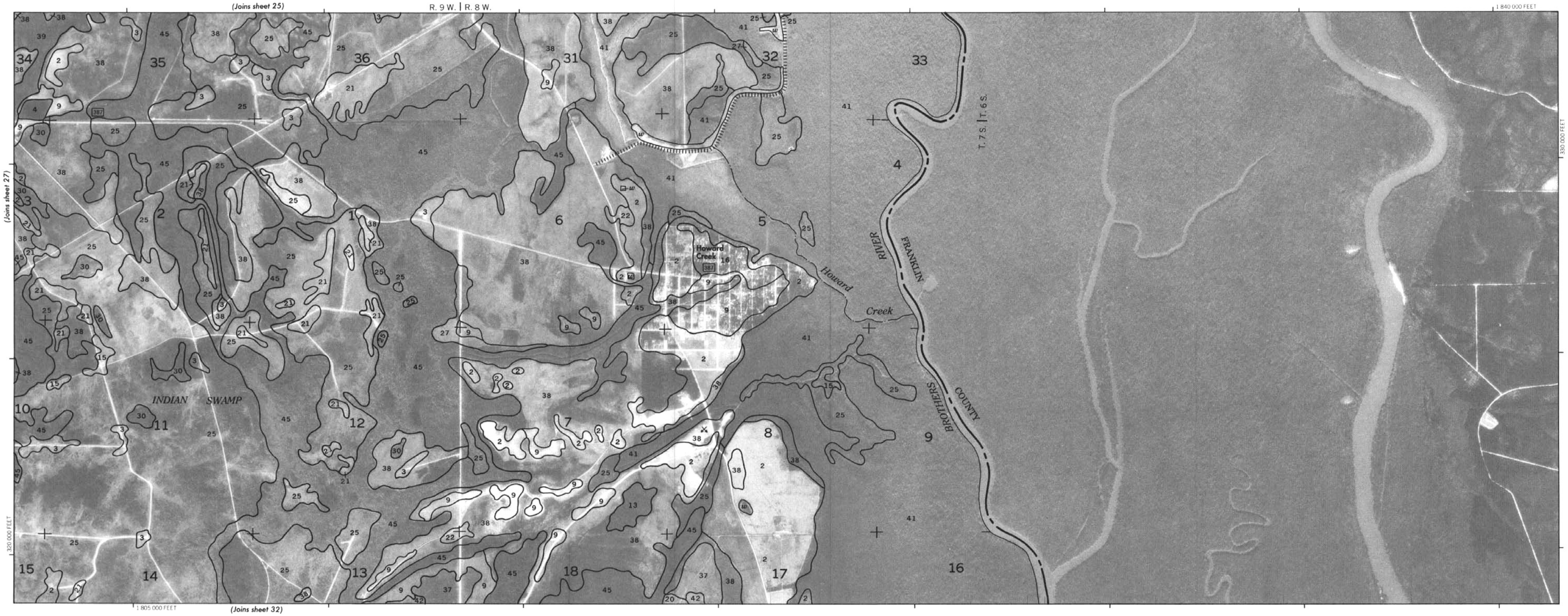


1 3/4 1/2 1/4 0 1 2 MILES

1 0.5 0 1 2 KILOMETERS

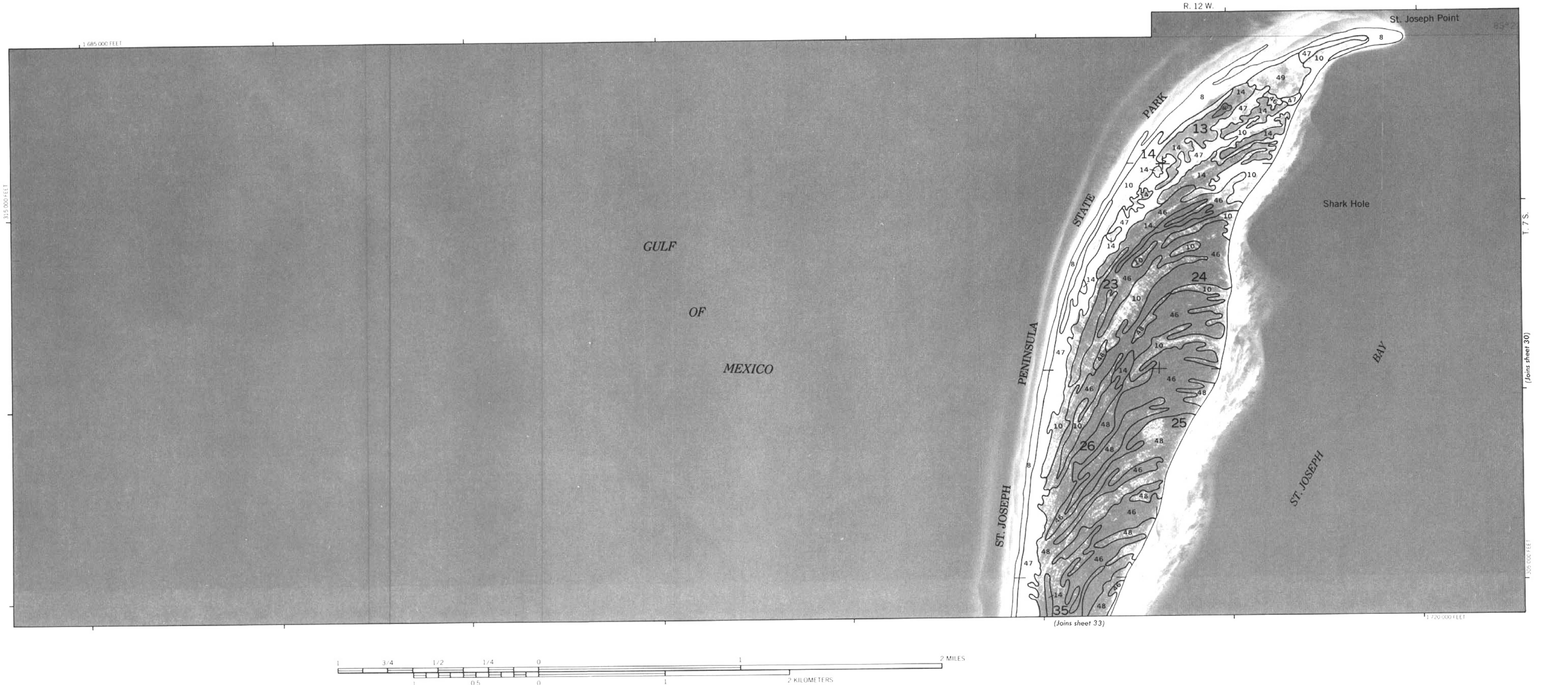

27
N
R. 10 W. | R. 9 W.
(Joins sheet 24)
1 765 000 FEET
T. 7 S. | T. 6 S.
330 000 FEET
(Joins sheet 26)
(Joins sheet 28)
(Joins sheet 31)
1 800 000 FEET
320 000 FEET
HOWARD CREEK ROAD
Bailey Branch
White City
INTRACOASTAL WATERWAY
Possum Branch
ST. JOE PAPER COMPANY FRESH WATER CANAL
RUDY BAY
Cypress Creek
1 3/4 1/2 1/4 0 1 2 MILES
1 0.5 0 1 2 KILOMETERS

N



1 3/4 1/2 1/4 0 1 2 MILES

1 0.5 0 1 2 KILOMETERS


29
N
R. 12 W.
St. Joseph Point
GULF
OF
MEXICO
ST. JOSEPH
PENINSULA
STATE
PARK
Shark Hole
ST. JOSEPH
BAY
T. 7 S.
(Joins sheet 30)
(Joins sheet 33)
1 685 000 FEET
1 720 000 FEET
2 MILES
2 KILOMETERS

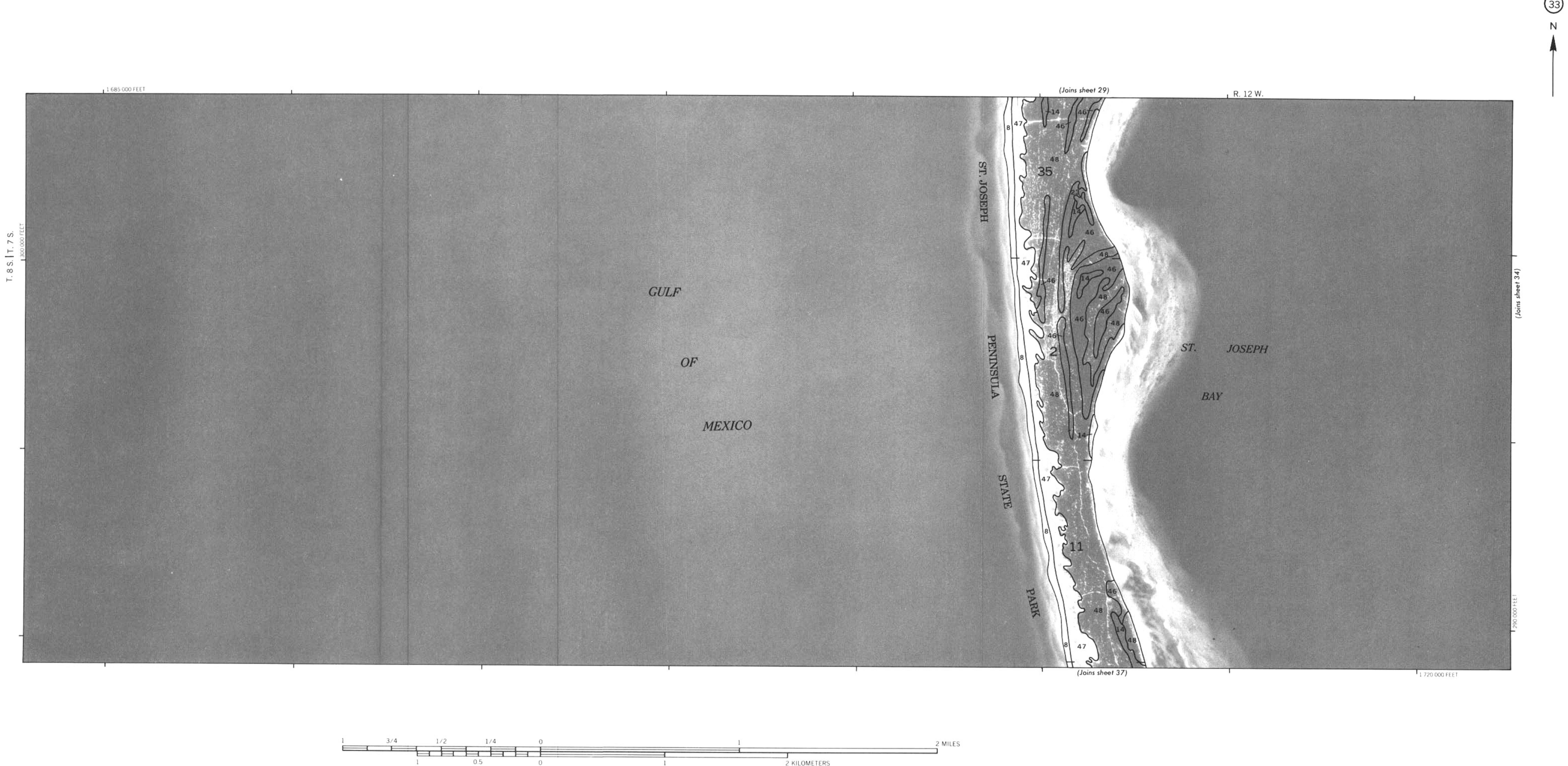
N


R. 11 W. | R. 10 W.
(Joins sheet 26)
(Joins sheet 29)
(Joins sheet 31)
(Joins sheet 34)
1 760 000 FEET
315 000 FEET
T. 7 S.
305 000 FEET
1 725 000 FEET
PANTHER SWAMP
ST. JOSEPH BAY
Palm Point
Highland View
Chickenhouse Branch
Horseshoe Creek
SPOIL AREA
GULF COUNTY CANAL
ST. JOE PAPER COMPANY FRESH WATER CANAL
water


1
3/4
1/2
1/4
0
1
2 MILES
0.5
0
1
2 KILOMETERS


31
N
1 765 000 FEET
R. 10 W. | R. 9 W.
(Joins sheet 27)
(Joins sheet 32)
(Joins sheet 35)
(Joins sheet 30)
1 800 000 FEET
315 000 FEET
305 000 FEET
T. 7 S.
ST. JOE PAPER COMPANY FRESH WATER CANAL
INTRACOASTAL WATERWAY
Possum Branch
Searcy Creek
Horseshoe Creek
INDIAN BAYOU
1 3/4 1/2 1/4 0 1 2 MILES
1 0.5 0 1 2 KILOMETERS


32
N
(Joins sheet 28)
R. 9 W.
R. 8 W.
(Joins sheet 31)
(Joins sheet 36)
1 805 000 FEET
1 840 000 FEET
315 000 FEET
305 000 FEET
Boggy Branch
INDIAN SWAMP
BROTHERS RIVER
FRANKLIN COUNTY
APALACHICOLA RIVER
T. 7 S.
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
1 3/4 1/2 1/4 0 1 2 MILES
1 0.5 0 1 2 KILOMETERS

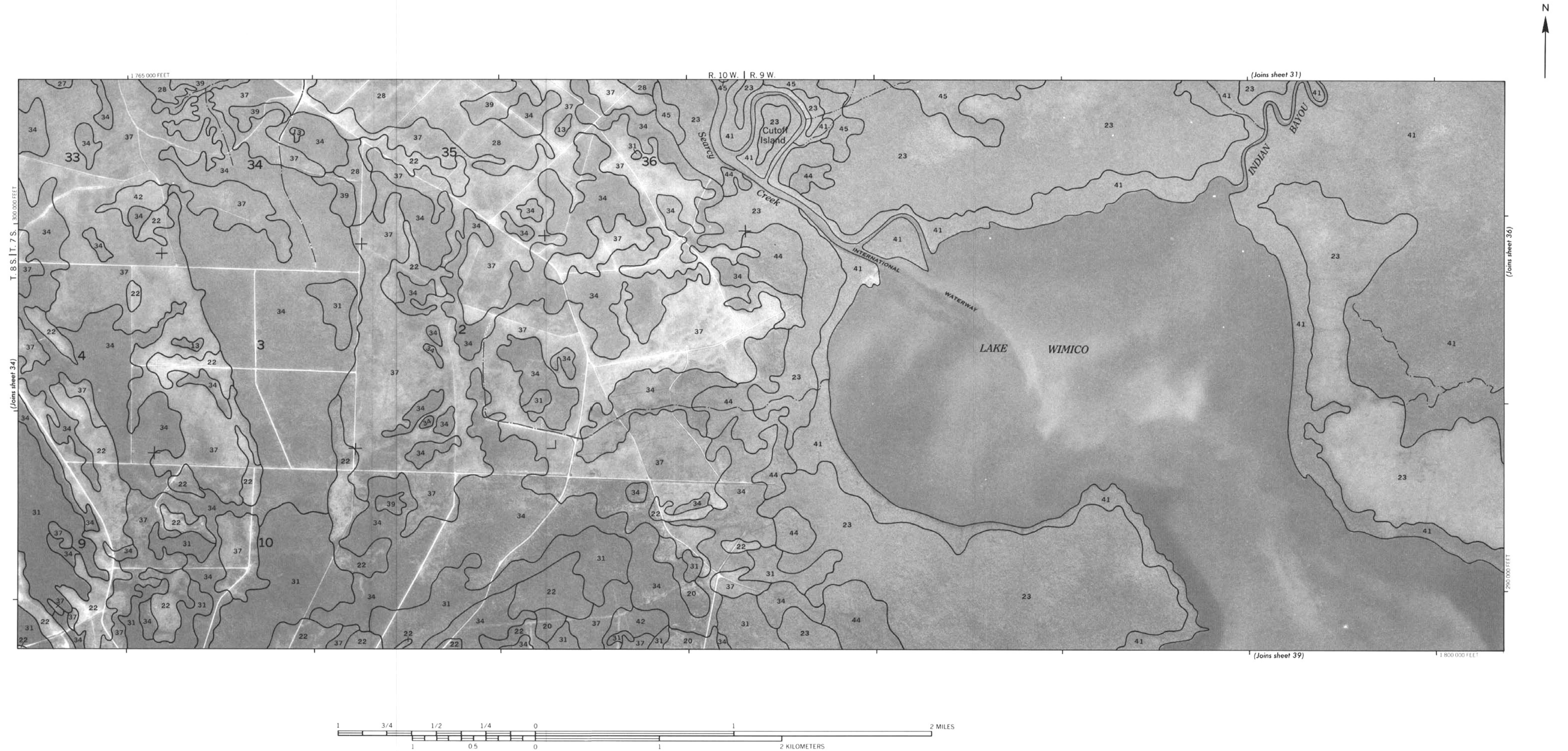

33
N
(Joins sheet 29)
R. 12 W.
1 685 000 FEET
T. 8 S. | T. 7 S.
300 000 FEET
(Joins sheet 34)
290 000 FEET
1 720 000 FEET
(Joins sheet 37)
GULF
OF
MEXICO
ST. JOSEPH
PENINSULA
STATE
PARK
ST. JOSEPH
BAY
35
2
11
8
14
46
47
48
1
3/4
1/2
1/4
0
1
2 MILES
1
0.5
0
1
2 KILOMETERS

34

N

1 3/4 1/2 1/4 0 1 2 MILES

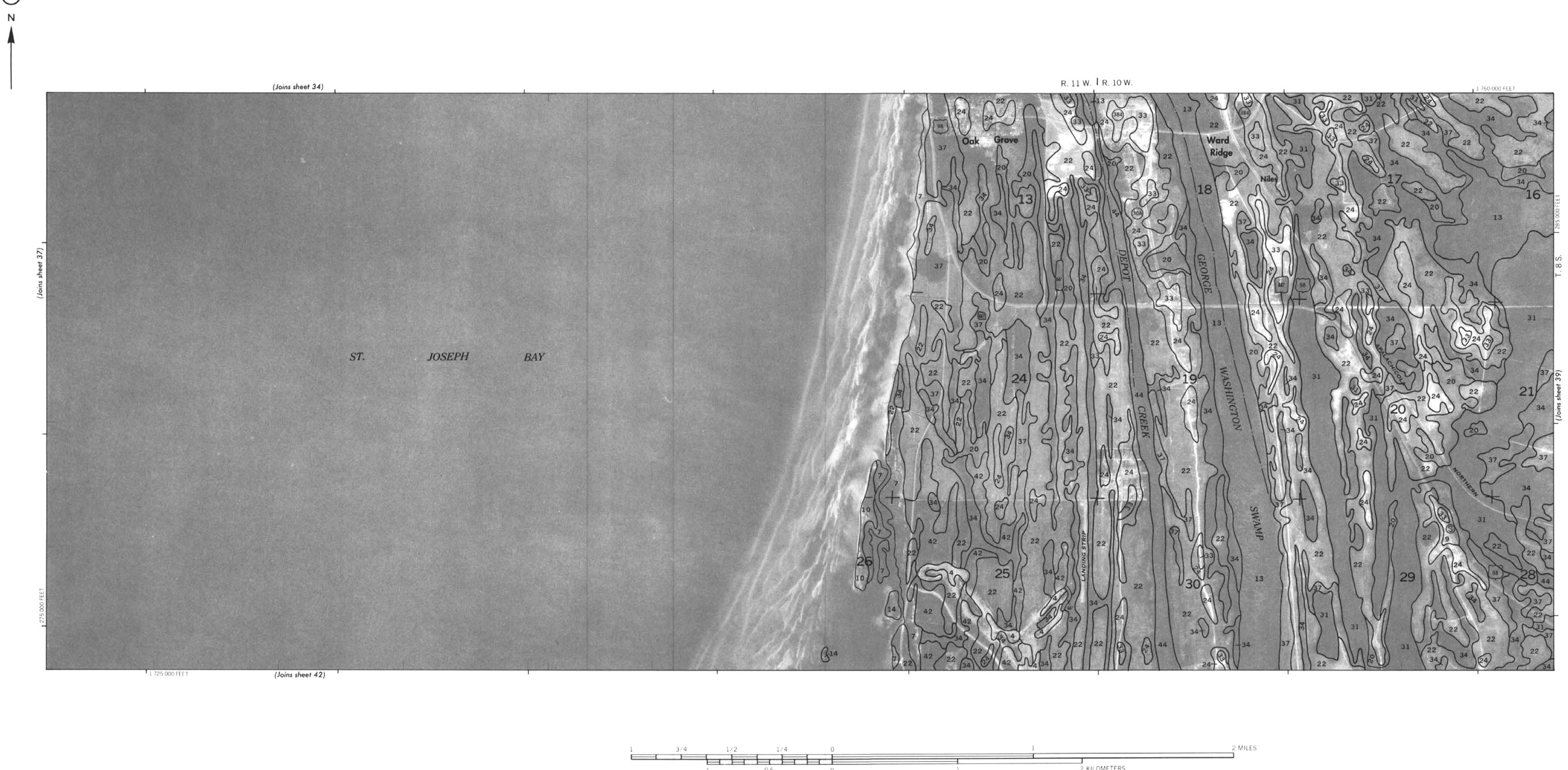
1 0.5 0 1 2 KILOMETERS


N
R. 10 W. | R. 9 W.
(Joins sheet 31)
(Joins sheet 36)
(Joins sheet 34)
(Joins sheet 39)
T. 8 S. | T. 7 S.
1 765 000 FEET
1 800 000 FEET
300 000 FEET
250 000 FEET
Searcy Creek
Cutoff Island
INTERNATIONAL WATERWAY
INDIAN BAYOU
LAKE WIMICO
1 3/4 1/2 1/4 0 1 2 MILES
1 0.5 0 1 2 KILOMETERS


N
(Joins sheet 32)
R. 9 W. | R. 8 W.
(Joins sheet 35)
(Joins sheet 40)
T. 8 S. | T. 7 S.
34
35
36
31
32
33
34
INDIAN
Bayou
SWAMP
Double
LAKE
WIMICO
Brown
Creek
SAUL
CREEK
Ingram
Creek
Johnson
Creek
Cedar
Creek
Johnson
Slough
Hidden
Johnson
Creek
Hoffman
Creek
APALACHICOLA
RIVER
FRANKLIN
COUNTY
23
26
36
38
41
1 805 000 FEET
1 840 000 FEET
1
3/4
1/2
1/4
0
1
2 MILES
1
0.5
0
1
2 KILOMETERS


37
N
1 685 000 FEET
R. 12 W.
(Joins sheet 33)
(Joins sheet 38)
(Joins sheet 41)
T. 8 S.
GULF
OF
MEXICO
ST. JOSEPH PENINSULA STATE PARK
ST. JOSEPH BAY
Eagle
Harbor
30E
1 720 000 FEET
1 3/4 1/2 1/4 0 1 2 MILES
1 0.5 0 1 2 KILOMETERS

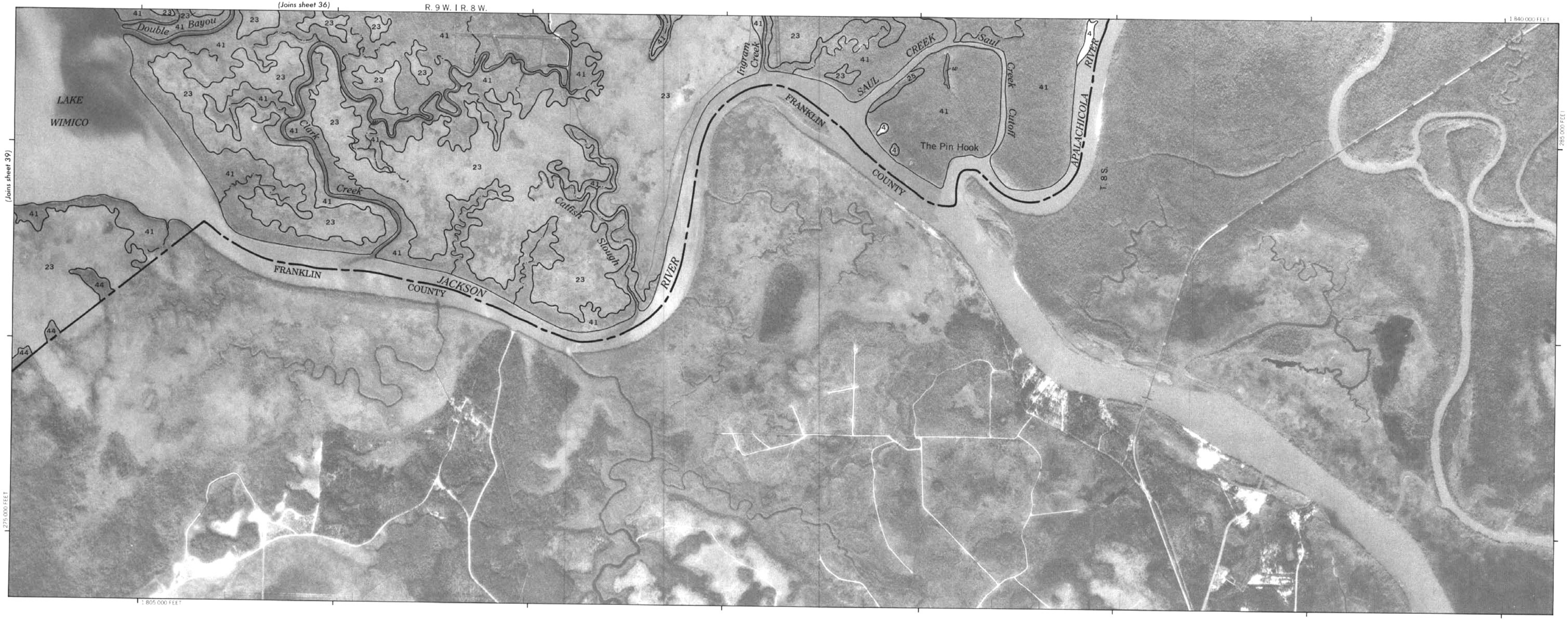
38


N
(Joins sheet 34)
R. 11 W. | R. 10 W.
1 760 000 FEET
(Joins sheet 37)
(Joins sheet 39)
(Joins sheet 42)
T. 8 S.
285 000 FEET
275 000 FEET
1 725 000 FEET
ST. JOSEPH BAY
Oak Grove
Ward Ridge
Niles
DEPOT CREEK
GEORGE WASHINGTON SWAMP
LANDING STRIP
APALACHICOLA NORTHERN
1 3/4 1/2 1/4 0 1 2 MILES
1 0.5 0 1 2 KILOMETERS


N
R. 10 W. | R. 9 W.
(Joins sheet 35)
(Joins sheet 38)
(Joins sheet 40)
(Joins sheet 43)
T. 8 S.
1 765 000 FEET
1 800 000 FEET
285 000 FEET
275 000 FEET
LAKE WIMICO
CREEK
DEPOT
Browns Neck
Columbus Bayou
FRANKLIN COUNTY
APALACHICOLA NORTHERN
DEPOT CREEK
1 3/4 1/2 1/4 0 1 2 MILES
1 0.5 0 1 2 KILOMETERS

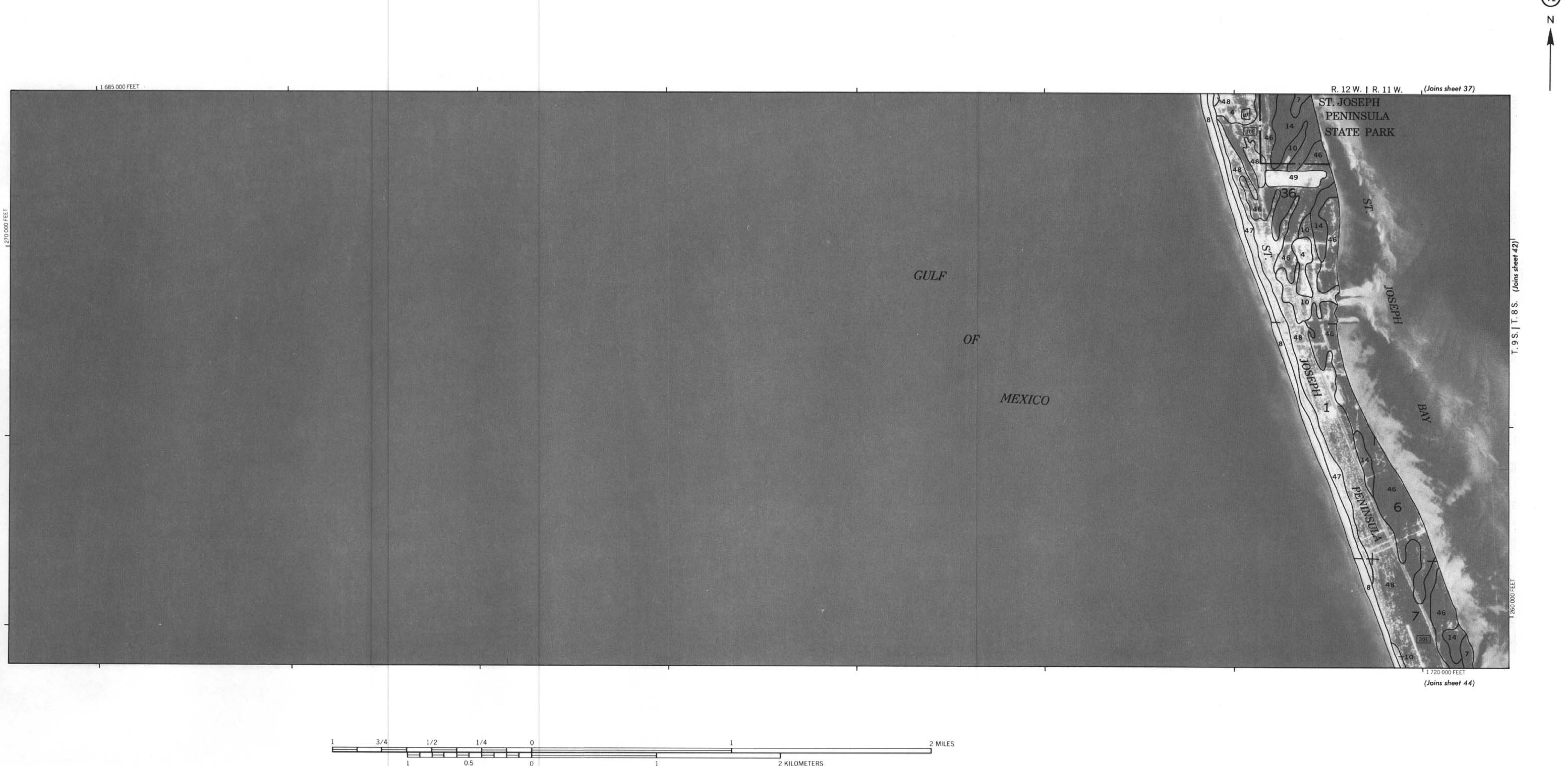
40

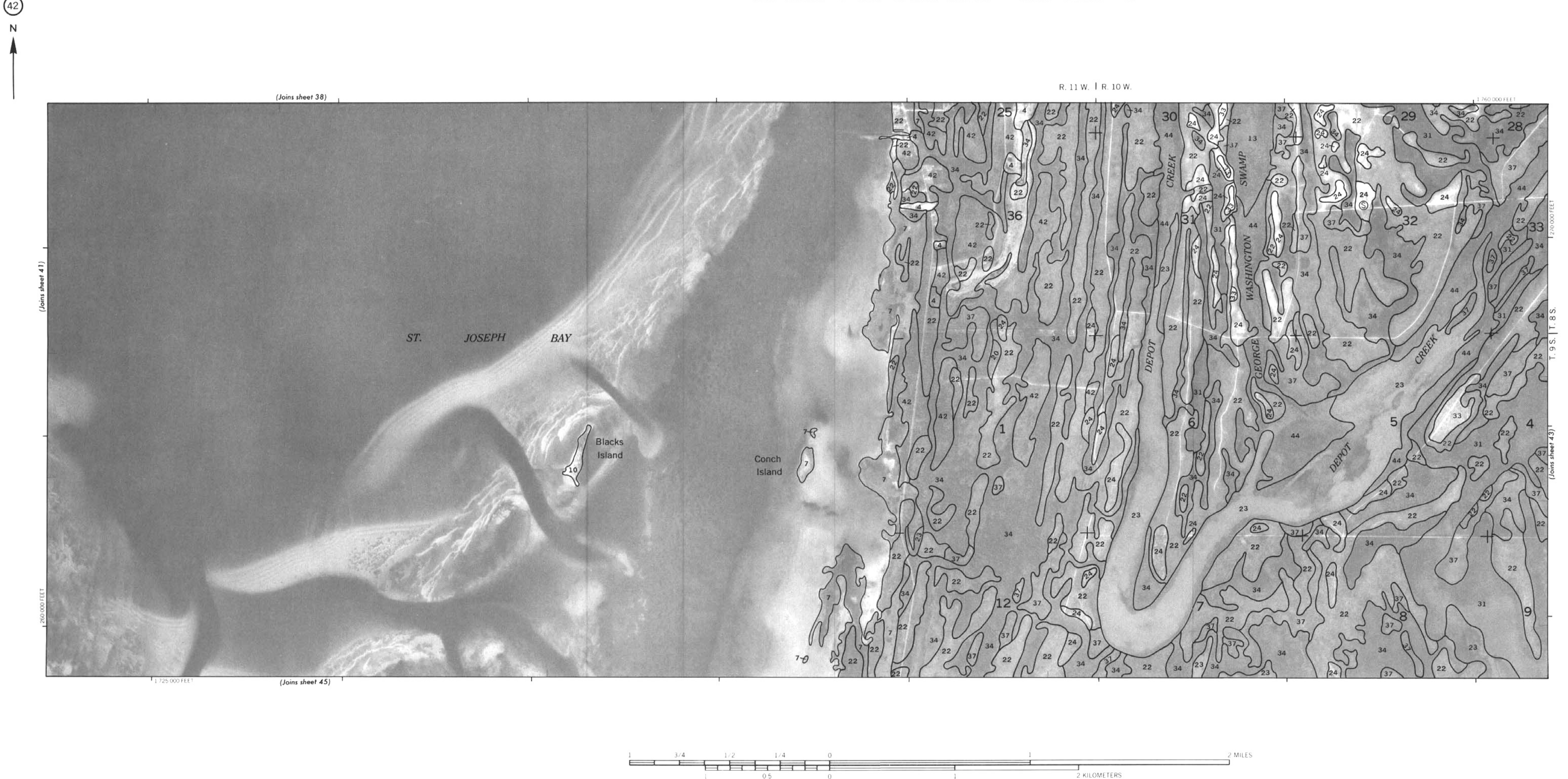
N

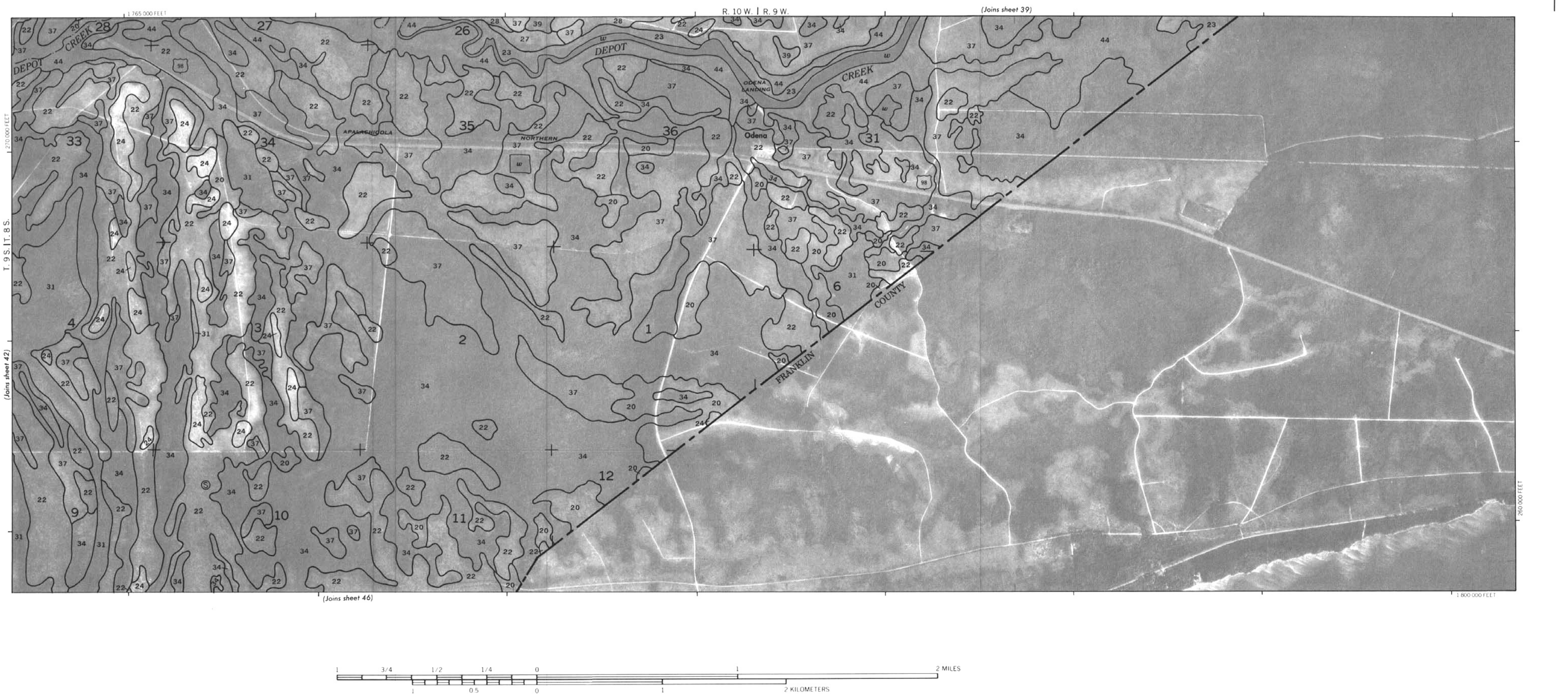


1 3/4 1/2 1/4 0 1 2 MILES

1 0.5 0 1 2 KILOMETERS

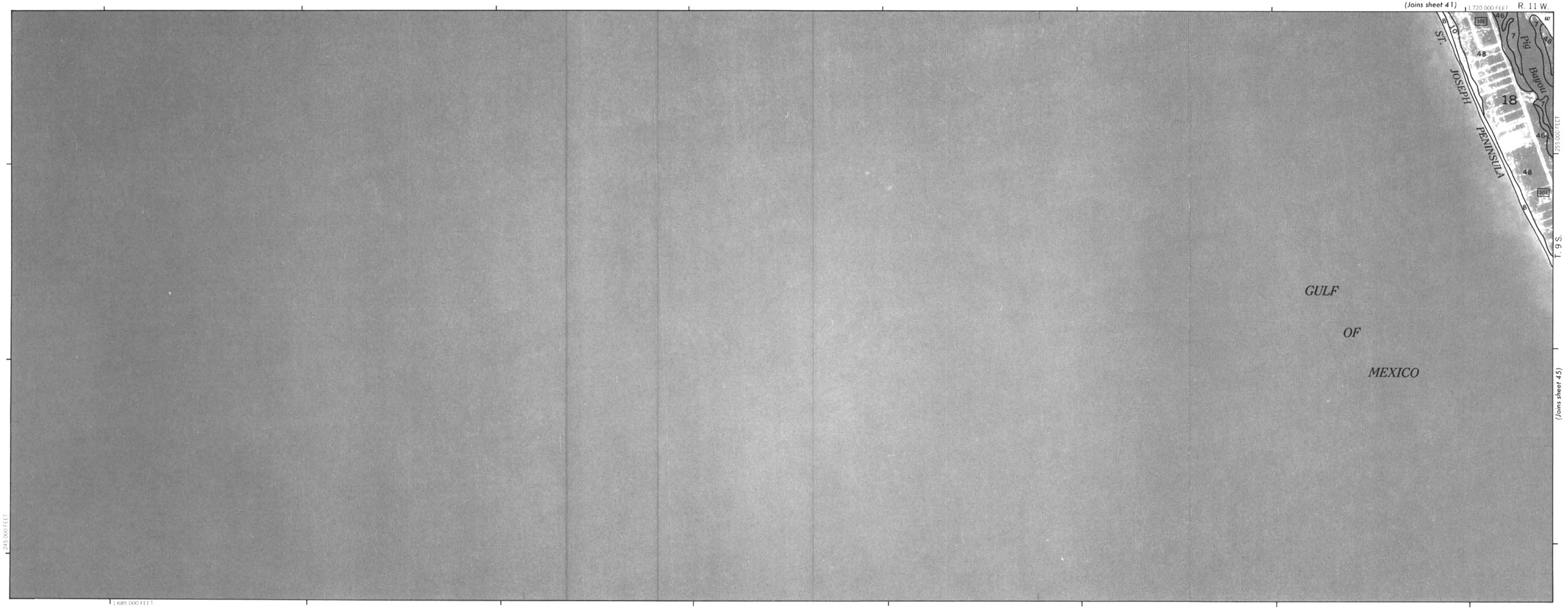

41
N
1 685 000 FEET
R. 12 W. | R. 11 W.
(Joins sheet 37)
270 000 FEET
ST. JOSEPH
PENINSULA
STATE PARK
GULF
OF
MEXICO
ST. JOSEPH PENINSULA
ST. JOSEPH BAY
T. 9 S. | T. 8 S.
(Joins sheet 42)
260 000 FEET
1 720 000 FEET
(Joins sheet 44)
48
4
8
46
14
10
49
36
47
1
6
7
30E
1
3/4
1/2
1/4
0
1
2 MILES
1
0.5
0
1
2 KILOMETERS


42
N
(Joins sheet 38)
R. 11 W. | R. 10 W.
(Joins sheet 41)
(Joins sheet 43)
(Joins sheet 45)
ST. JOSEPH BAY
Blacks Island
Conch Island
DEPOT CREEK
WASHINGTON SWAMP
GEORGE
DEPOT
CREEK
T. 9 S. | T. 8 S.
1 725 000 FEET
1 760 000 FEET
270 000 FEET
260 000 FEET
1 3/4 1/2 1/4 0 1 2 MILES
1 0.5 0 1 2 KILOMETERS


43
N
(Joins sheet 39)
R. 10 W. | R. 9 W.
1 765 000 FEET
270 000 FEET
T. 9 S. | T. 8 S.
(Joins sheet 42)
(Joins sheet 46)
260 000 FEET
1 800 000 FEET
DEPOT CREEK
APALACHICOLA NORTHERN
Odena
ODENA LANDING
FRANKLIN COUNTY
1 3/4 1/2 1/4 0 1 2 MILES
1 0.5 0 1 2 KILOMETERS

44

N



1 3/4 1/2 1/4 0 1 2 MILES

1 0.5 0 1 2 KILOMETERS


45
N
1 725 000 FEET
R. 11 W. | R. 10 W.
(Joins sheet 42)
(Joins sheet 44)
(Joins sheet 46)
T. 9 S.
255 000 FEET
240 000 FEET
1 760 000 FEET
ST. JOSEPH BAY
Pig Island Bayou
Richardson Hammock
Lighthouse Bayou
Money Bayou
Money Beach
INDIAN LAGOON
INDIAN PENINSULA
ST. JOSEPH PENINSULA
GULF OF MEXICO
CAPE SAN BLAS
water
30E


46
N
R. 10 W.
(Joins sheet 43)
(Joins sheet 45)
INDIAN LAGOON
INDIAN PENINSULA
Indian Pass
FRANKLIN COUNTY
T. 9 S.
1 800 000 FEET
255 000 FEET
245 000 FEET
1 765 000 FEET
2 MILES
2 KILOMETERS